

# PROCESSOR

Products, News & Information Data Centers Can Trust. Since 1979

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#### Cloud Computing

Is your enterprise ready for cloud computing? What types of services are currently available for small to midsized enterprises? Find out in our special coverage.

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#### Solutions To Common Data Center Problems

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# Cloud Contemplation

## Is Your Enterprise Ready To Move All Or Part Of Its IT Infrastructure To The Cloud?

by Christian Perry

**GATHERING CLOUDS OVER DATA CENTERS** can prompt spontaneous inspections of uninterruptible power supplies and generators by nervous IT personnel. But today, another type of cloud formation is actually providing relief to thousands of data centers, thanks to its ability to offload hefty computing, bandwidth, and storage demands through an on-demand service-oriented model. Still, for organizations that have yet to use cloud services, questions abound as to whether the cloud can be a proper fit for their environment.

“Cloud computing services are still in their infancy and still have a long way to go before being ready for adoption in most IT organizations,” says Jay Graham, vice president of infrastructure management services at Provali Group ([www.provaligroup.com](http://www.provaligroup.com)). “Right now, most IT organizations are asking if cloud computing is ready for enterprise use. However, only half of the equation is being addressed. The other half of the equation is: Are IT organizations and systems ready to implement cloud computing and related services?”

The key to solving this equation, experts say, lies in obtaining a thorough understanding of the cloud concept, because many definitions exist for what is commonly referred to as simply “the cloud.” From there, organizations can more accurately investigate whether cloud options can co-exist with their current operations.



### Key Points

- Organizations considering the cloud must determine how those services would interact with and impact their business initiatives.
- Transaction-heavy businesses and organizations with regulatory concerns should approach the cloud with an extra dose of caution to avoid potential problems.
- If your applications won’t work in a cloud-friendly atmosphere, the chances of finding success with cloud services diminish significantly.

#### Is The Cloud A Match?

The wide variation of definitions of cloud-based infrastructure has caused significant confusion in the industry, says Dave Malcolm, senior vice president and chief technology officer of Surgient ([www.surgient.com](http://www.surgient.com)), but he adds that Surgient defines cloud-based infrastructure “as a pool of abstracted, scalable, and self-managed infrastructure capable of running end-customer applications and billed or charged by consumption.” These pools can be internal to the organization or hosted externally by a third party.

“The value of cloud-based infrastructures is that they are

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# Get More From Existing Equipment

## Asset Maintenance & Virtualization Top Choices For Extending Equipment

by Sandra Kay Miller

**CHECK OUT ANY DATA CENTER** that’s been online for a decade or two, and chances are there will be legacy equipment still humming along earning its keep through some sort of useful service. A few years ago, data center managers might have cringed at the thought of a 10-year-old server or tape backup system, but today, the ability to lengthen equipment deployments is the mark of a well-managed IT department.

While the general rule for data center hardware has typically been three to five years between upgrades and replacements,

in the current tight economic climate, organizations are extending life cycles in an effort to squeeze more ROI from existing assets, especially servers, storage, and power equipment.

The two principal methods for stretching the life span of IT assets are proper maintenance and leveraging newer technologies, especially virtualization.

#### TLC

Rob Enderle, president and principal analyst of the Enderle Group, explains that data centers should shift from policies of equipment replacement to those focused on

### Key Points

- Establishing a comprehensive virtualization strategy that combines server and storage virtualization will help prevent expensive hardware purchases and maximize existing IT investments.
- Moving parts are subject to wear and tear. Keep air intakes free of dust and debris.
- Install regular service packs, upgrades, and patches to operating systems, firmware, and applications to ensure optimal performance.
- Excess heat can rapidly reduce the life expectancy of practically all data center assets.

preventive maintenance and system longevity. He notes, “This typically means making sure thermals stay toward the lower end of the recommended range.”

Offering ideas on how to achieve Enderle’s advice, Gerry Cullen, founder of NetBotz ([www.netbotz.com](http://www.netbotz.com)) and IT Watch-Dogs (512/257-1462; [www.itwatchdogs.com](http://www.itwatchdogs.com)),

*Go to Page 6*







which Google acquired last year. His departure comes along with a number of others that have taken place during the past two months, including the departure of Tim Armstrong, head of sales in the Americas, and Sukhinder Singh Cassidy, head of Google's Asia-Pacific and Latin America operations.

### Breach Costs Heartland Payment Systems Millions

Heartland Payment Systems announced that it has already spent or reserved more than \$12.6



million to cover expenses related to a security breach disclosed in January in which hackers broke into its systems and stole confidential card data. Of the \$12.6 million, the company is using \$6 million to pay off a fine from MasterCard, which Heartland is in the process of disputing. The Heartland breach is thought to be one of the largest of its kind, affecting as many as 100 million cards.

### Nortel Networks Stabilizing

Nortel Networks is starting to see revenue and cash balances stabilize, according to CEO Mike Zafirovski. However, the company's first-quarter revenues dropped 37% compared to the same period a year ago, totaling \$1.73 billion as opposed to \$2.76 billion in the first quarter of 2008. The drop, according to Zafirovski, can be blamed on the economic downturn, which caused Nortel to file for creditor protection in the United States and Canada. Still, Nortel hung on to a cash balance of \$2.48 billion at the end of the quarter, slightly higher than the \$2.4 billion balance at the end of the previous quarter.

### Sun Shareholders Attempt To Block Sale

Following Oracle's announcement of its plans to purchase Sun Microsystems, Sun's shareholders filed suit to block the sale. There are three class-action lawsuits in total, and all three assert that the price of the sale is unsatisfactory; Oracle plans to pay \$9.50 per share for a total cost of \$7.4 billion. There are also accusations that Sun may have violated the U.S. Foreign Corrupt Practices Act in fiscal 2009. Sun has not yet responded to any of the suits but is expected to do so in the near future.

### Microsoft Sells \$3.75 Billion In Debt

Microsoft sold a \$3.75 billion debt into the U.S. corporate bond market in three parts. As of September 2008, the company was allowed to issue up to \$6 billion in debt. The sale included \$2 billion worth of five-year notes yielding 95 basis points over U.S. Treasury bonds, \$1 billion of 10-year notes yielding 105 basis points over U.S. Treasury bonds, and \$750 million of 30-year bonds also yielding 105 basis points. Microsoft maintains that it doesn't need financing but rather wanted to take advantage of the current market conditions and its stellar credit rating.

### Cisco Earnings Down, But Cash Balances Growing

Sales, income, and shares all dropped in Cisco's earnings report for its third fiscal quarter, which ended April 25. A year-over-year dip

of 16.6% in GAAP net sales put the networking giant at \$8.2 billion. GAAP net income fell 24% over the previous 12 months to \$1.3 billion, which dropped share earnings 20.7% to 23 cents each. On a non-GAAP annual basis, net income tumbled 24.1% to \$1.8 billion, while earnings per share fell 21.1% to 30 cents. The company now has \$33.6 billion in cash, cash equivalents, and investments. This continues a steady increase from \$26.2 billion a year ago.

### Symantec Ends Fiscal 2009 On A Down Note

A \$7.4 billion non-cash goodwill impairment charge weighed heavily on Symantec's fiscal year ending April 3. The company reported a GAAP net loss for the fourth quarter of \$249 million, down year-over-year from net income of \$186 million. The company's diluted loss per share was 30 cents, down from earnings per share of 22 cents a year ago. The operating loss for the quarter totaled \$192 million, compared to operating income of \$213 million the previous year. As for GAAP results for the fiscal year, the company had an operating loss of \$6.5 billion, a net loss of \$6.7 billion, and an \$8.10 diluted loss per share.

### EPA Investigates Google

Google is being investigated by the U.S. Environmental Protection Agency regarding an alleged release of refrigerant at one of the company's data centers, as well as the accuracy of related statements and records. The company, which sets high environmental standards for itself, disclosed the investigation in a quarterly report filed with the Securities and Exchange Commission and says the alleged incident took place at one of the smaller data centers it acquired from DoubleClick. Google is cooperating with the investigation and has provided the EPA with documents and other materials. The incident could result in fines, civil or criminal penalties, or other administrative actions.



### Alcatel-Lucent Posts Loss

Telecommunications company Alcatel-Lucent posted first-quarter revenues of about 3.6 billion euros, down 6.9% from a year ago, and a net loss of 402 million euros, more than double the 181 million euro loss it reported during last year's first quarter. "This quarter was about putting together the new Alcatel-Lucent," says CEO Ben Verwaayen, citing that "2009 will be a year of transition" as it works to complete the costs and restructuring involved with its purchase of Lucent Technologies. Alcatel-Lucent's Services segment was the bright spot in the quarter, with revenues up 20.6% compared to a year ago.

### Client Linux Use Increases

Linux use on client devices has surpassed 1% for the first time, according to the latest figures from Net Applications. The firm attributes the milestone to the fact that Linux-



based systems have become "more functional, easier to use, and preinstalled on computers from vendors." Linux has been most successful as a server operating system. Windows was still the clear leader in terms of operating system use on clients, with 87.9% of the market; Mac had 9.73% and Linux had 1.02%. The iPhone and iPod touch together had 0.7% market share. A year ago, Windows had a market share of 91.58% and Linux had a 0.63% share.

### Report: Energy Efficiency Ranks High In Importance

More than 70% of business leaders are paying more attention to energy efficiency than they were a year ago, with 58% ranking energy management as extremely or very important. Those are among the figures reported in the latest Energy Efficiency Indicator survey conducted by Johnson Controls and the International Facility Management Association. Of enterprises planning new construction pro-



jects, 38% say they're seeking green building certification and 45% say that although they don't plan to certify their new construction, they are planning to incorporate green elements. Limited capital budgets and unattractive payback are the two biggest barriers to green investments.

### EU Fines Intel

After a nearly eight-year-long antitrust case, the European Commission fined chip maker Intel a record \$1.45 billion for illegal anticompetitive practices. Neelie Kroes, the European Union's competition commissioner, says Intel violated European antitrust laws and reduced consumers' choices for computer chips. The commission found that Intel gave rebates and direct payments to computer manufacturers and a major retailer to delay or cancel products that included chips made by rival AMD. It is the largest fine ever imposed for a breach of competition law in the European Union. Intel says the decision is baseless and plans to appeal.

### Energy Star Qualifications Tightened For Screens

Advances in energy-efficient LED technology and lighting methods have prompted the Environmental Protection Agency to set stricter criteria for computer monitors and digital picture frames to qualify for an Energy Star label. The new specifications, Version 5.0, will replace the current 4-year-old requirements in October and will apply only to monitors manufactured after that date. The new specifications require about 20% less overall energy usage than the current Energy Star criteria. Currently, about 45% of monitors qualify for an Energy Star label; less than 25% of those would meet the new criteria.

### Verizon Sells Land Lines To Frontier

Verizon Communications announced that it will sell its land line divisions to Frontier Communications for cash (\$3.3 billion) and Frontier stock (\$5.2 billion). The deal provides Frontier with 4.8 million access lines for both SME and residential customers. Verizon lost 10.2% of its landlines in 2008 but will continue operating with 30.3 million lines once the Frontier agreement is carried out. Verizon will transfer phone line assets in Arizona, Idaho, Illinois, Indiana, Michigan, Nevada, North Carolina, Ohio, Oregon, South Carolina, Washington, West Virginia, Wisconsin, and California. Frontier hopes to save \$500 million per year.

## Upcoming IT Events

Are you looking to learn more about data center or IT topics? Network with some of your peers? Consider joining a group of data center professionals. If you have an event you'd like listed, please send an email to [feedback@processor.com](mailto:feedback@processor.com).

#### - MAY -

##### ISSA Des Moines

May 23, 11:30 a.m.  
1401 50th St., Suite 200  
West Des Moines, Iowa

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##### ISSA Baltimore

May 27, 4:30 p.m.  
Sparta Inc.  
7110 Samuel Morse Drive, Suite 200  
Columbia, Md.  
[www.issa-balt.org](http://www.issa-balt.org)

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##### 2009 Techno Security Conference

May 31-June 3  
Myrtle Beach, S.C.  
[www.techsec.com/html/Techno2009.html](http://www.techsec.com/html/Techno2009.html)

#### - JUNE -

##### AFCOM Central Ohio

June 10, 11:30 a.m.  
OSU Medical Center, 410 W. 10th Ave.  
Columbus, Ohio  
[www.afcomcentralohio.org](http://www.afcomcentralohio.org)

.....

##### AITP-Central Idaho

June 10, 11:45 a.m.  
Owyhee Plaza Hotel, 1109 Main St.  
Boise, Idaho  
[www.boisestate.edu/dpma/dpmaci/centida.html](http://www.boisestate.edu/dpma/dpmaci/centida.html)

.....

##### Portland Area Computer Measurement Group

June 10, 8:30 a.m.  
Con-way Inc., 2055 NW Savier St.  
Portland, Ore.  
[regions.cmg.org/regions/pacmg](http://regions.cmg.org/regions/pacmg)

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##### AITP Washington D.C.

June 11, 6:30 p.m.  
Alfio's Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
[aitpwashdc.ning.com](http://aitpwashdc.ning.com)

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##### ISSA Northeast Ohio

June 11, 8 a.m.  
Corporate College East  
4400 Richmond Road  
Warrensville Heights, Ohio  
[neoissa.org](http://neoissa.org)

.....

##### AITP Pittsburgh

June 15, 6 p.m.  
Sokol Club-Southside, 2912 E. Carson St.  
Pittsburgh, Pa.  
[www.aitp-pgh.org](http://www.aitp-pgh.org)

.....

##### AITP Southwest Missouri

June 16  
Springfield, Mo.  
[aitpspringfield.org](http://aitpspringfield.org)

.....

##### Oklahoma City AITP Chapter

June 16  
Oklahoma City, Okla.  
[www.aitp.org/organization/chapters/chapterhome.jsp?chapter=40](http://www.aitp.org/organization/chapters/chapterhome.jsp?chapter=40)

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##### ISSA Oklahoma City

June 17  
Spaghetti Warehouse, 101 E. Sheridan Ave.  
Oklahoma City, Okla.  
[www.issa-okc.org](http://www.issa-okc.org)

.....

##### AITP Omaha

June 18, 5:30 p.m.  
Seraph Corp.  
Omaha, Neb.  
[www.aitpomaha.org](http://www.aitpomaha.org)

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##### AITP Tarheel

June 18, 6 p.m.  
Foothill Brewery, 638 W. 4th St.  
Winston-Salem, N.C.  
[www.aitp.org](http://www.aitp.org)

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##### Gartner IT Infrastructure, Management and Operations Summit

June 23-25  
Gaylord Palms Resort and Convention Center  
Orlando, Fla.  
[Gartner.com/us/iom](http://Gartner.com/us/iom)

*The intent of the Gartner IT Infrastructure, Operations & Management Summit is to assist IT infrastructure and operations leaders in delivering superior operations while they contribute to business advantage. Attendees at the conference will be empowered to make the everyday, critical decisions to succeed in both the tactical and strategic aspects of the job.*

PRODUCT SPOTLIGHT | COOLING EQUIPMENT

# A Look At The Market For Portable Cooling Systems

## MovinCool Office Pro 12

The MovinCool Office Pro 12 is a portable spot-cooling air conditioner designed to lower operating temperatures of computers and networking, communication, and office equipment to maximize reliability and hardware life span. The Office Pro 12 is self-contained and portable and features an electronic thermostat and a programmable control panel for tailored cooling when and where you need it most.

- Best For: Offices filled with heat-generating electronics
- Provides 11,800 BTU/hr of cool air maximum spot cooling
  - Programmable digital controller
  - Operates on standard 115V power
  - No costly installation necessary
  - Maintains ideal operating temperature for heat-sensitive electronics, down to 65° F

\$3,655  
(800) 367-8675  
www.spot-coolers.com



## MovinCool Office Pro 18

The MovinCool Office Pro 18 offers superior cooling capacity without requiring a nonstandard power source. This portable air conditioner protects sensitive data and electronics systems from loss and failure, acting as an insurance policy for your infrastructure. The Office Pro 18 features an intuitive control panel that lets users designate when the unit operates.

- Best For: Heat-sensitive office and data systems
- Provides 16,800 BTU/hr of cool air maximum spot cooling
  - Maximum cooling from a standard 115V power source
  - Programmable controls enable weekend and after-hours cooling
  - No costly installation necessary
  - UL-listed for safe operation

\$4,065  
(800) 367-8675  
www.spot-coolers.com



## MovinCool Office Pro 36

The MovinCool Office Pro 36 delivers 36,000 BTU/hr of spot cooling for sensitive equipment. The Office Pro 36 features an intuitive control panel that lets users program the unit to operate after hours or over the weekend. The portable self-contained air conditioner requires no costly installation.

- Best For: Servers, routers, telecommunications, and other heat-sensitive equipment
- Provides 36,000 ETL-verified BTU/hr of cool air maximum spot cooling
  - Operates on a 208/230V power source
  - Features an AFCI plug for added safety against electrical arcing
  - Supports plug-and-play condensate pump
  - Easy-to-use programmable controls
  - Self-contained, portable, and easy to set up and operate

\$6,995  
(800) 367-8675  
www.spot-coolers.com



## MovinCool Office Pro 60

The MovinCool Office Pro 60 delivers up to 60,000 BTU/hr of cooling capacity, making it twice as powerful as MovinCool's Office Pro 24. This portable air conditioner is designed to manage temperatures for computer networks, communications equipment, and office electronics. The self-contained Office Pro 60 is easy to install: Just position the wheeled unit, plug it in, and turn it on.

- Best For: Large office spaces and computer rooms filled with heat-sensitive electronics
- Programmable digital controller enables weekend and after-hours cooling
  - Operates on 220V power
  - Delivers 60,000 BTU/hr of cool air to the room that needs it most
  - Provides cooling in the low 60s° F to maximize the life span of heat-sensitive electronics
  - Condensation pump included for uninterrupted operation
  - UL-listed for safe operation

\$11,145  
(800) 972-6600  
www.atlassales.com



## MovinCool Office Pro 63

The MovinCool Office Pro 63 delivers up to 60,000 BTU/hr of cooling capacity and is ideally suited to the demands of large office spaces and heat-sensitive electronics installations. This portable air conditioner is self-contained and operates on 460V power, for as little as 15 cents per hour.

- Best For: Large office spaces and computer rooms filled with heat-sensitive electronics
- Programmable digital controller enables weekend and after-hours cooling
  - Operates on 460V power
  - Provides 60,000 BTU/hr of cool air to the room that needs it most
  - Provides cooling in the low 60s° F to maximize the life span of heat-sensitive electronics
  - Condensation pump included for uninterrupted operation
  - UL-listed for safe operation

\$12,495  
(800) 367-8675  
www.spot-coolers.com



## MovinCool CM12

The MovinCool CM12 is a ceiling-mounted packaged air conditioner that delivers spot cooling for space-limited installations and server rooms. The CM12 frees up valuable floor space and features built-in flanges and mounting brackets, letting users install it quickly and with minimal effort. The CM12 is a cost-effective spot-cooling alternative to central air conditioning.

- Best For: Space-limited equipment rooms and cramped server and telecom closets
- Provides 10,500 BTU/hr of cool air at 80° F at 50% RH
  - Provides 13,000 BTU/hr of cool air at 95° F at 60% RH
  - Operates on standard 115V power
  - At only 15-1/2 inches tall, it fits into tight ceiling spaces, freeing up floor space

\$2,895  
(800) 972-6600  
www.atlassales.com



## NorthWind Tundra MAC 1811

NorthWind's Tundra MAC 1811 is a 1.5-ton portable air conditioner best suited for server rooms, surgical suites, and other commercial/industrial spaces. The MAC 1811 features the ACRS (Advanced Condensate Removal System), which consists of a high-lift condensate pump and a five-gallon tank. The unit produces 16,900 BTU/hr at 95° F at 60% RH.

- Best For: Equipment rooms and server closets up to 600 square feet
- Provides 16,900 BTU/hr of cool air
  - Includes ACRS condensate pump and tank system
  - Operates on standard 115V power
  - Supports use of a remote thermostat
  - Unit automatically restarts after power interruption
  - Electromechanical controls
  - Automatic condenser fan cycling

(800) 972-6600  
www.atlassales.com



## Temp-Air Topaz TZ-18A

The Temp-Air Topaz TZ-18A portable air conditioner operates at decibel levels suitable to an office environment. Features include backward-inclined plenum evaporator and condenser fans and a thermostatic expansion valve that automatically adjusts to the environment to accommodate extreme temperatures.

- Best For: Office environments that require a quiet spot cooler
- Provides 17,600 BTU/hr of cool air at 95° F at 60% RH
  - Operates on standard 115V power
  - Programmable temperature controls
  - 1,000 CFM condenser
  - Runs at 63dB sound level

\$3,672  
(800) 836-7432  
gotopaz.com



## Temp-Air Topaz TZ-24A

When you need something a little more robust than the TZ-18A, Temp-Air recommends the Topaz TZ-24A, a portable air conditioner that delivers superior spot cooling while operating at reasonable decibel levels. As with all Topaz models, the TZ-24A utilizes a thermostatic expansion valve that lets the unit operate in extreme temperatures. The TZ-24A also has a mechanical thermostat and programmable temperature controls.

- Best For: Office environments that require a robust but quiet spot cooler
- Provides 29,600 BTU/hr of cool air at 95° F at 60% RH
  - Operates on a single-phase 230V power supply
  - Programmable temperature controls
  - 1,000 CFM condenser
  - Runs at 63dB sound level

\$4,249  
(800) 836-7432  
gotopaz.com





# COOLING EQUIPMENT | PRODUCT SPOTLIGHT

Compiled by Andrew Leibman

## Temp-Air Topaz TZ-60A

Temp-Air's Topaz TZ-60A is a 5-ton portable air conditioner that is ideal for spot cooling in demanding environments. The Topaz TZ-60A delivers 77,500 BTU/hr of cooling capacity at 95° F at 60% RH. Like other Topaz models, the TZ-60A is able to handle wider temperature fluctuations because of its thermostatic expansion valve. Other features include a mechanical thermostat and programmable temperature controls.

Best For: Offices, server rooms, and other commercial environments

- Provides 77,500 BTU/hr of cool air at 95° F at 60% RH
- Operates on a single-phase 230V power supply
- Backward-inclined plenum evaporator and condenser fans
- Thermostatic expansion valve lets it adjust to extreme temperatures
- 3,900 CFM condenser
- Runs at 71dB sound level

\$8,497  
(800) 836-7432  
gotopaz.com



## KwiKool SAC2411

KwiKool's Strategic Air Center series of portable spot coolers feature microprocessor digital controls and an Easy-Touch control panel. The SAC2411 is an air-cooled 2-ton portable spot cooler that is the largest-capacity unit that will still operate on a dedicated 115V/20A circuit. The SAC2411 also supports 725 CFM evaporator airflow and 1,350 CFM condenser airflow.

Best For: Computer room or warehouse use

- Provides 23,500 BTU/hr of cool air at 95° F at 60% RH
- Operates on standard 115V power
- Operating range between 60 and 110° F
- Easy-access hinged panel with Kwikloks

\$5,295  
(800) 972-6600  
www.atlassales.com



## KwiKool SWAC6021

The KwiKool SWAC6021 is a water-cooled, large-capacity 5-ton spot cooler that features a compact 24.25- x 26- x 57.5-inch form factor. Like other water-cooled systems, the SWAC6021 exchanges heat using water, so users won't need to fuss with ducting. This unit also features a digital thermostat.

Best For: Computer room or warehouse use

- Provides 60,000 BTU/hr of cool air at 95° F at 60% RH
- Operates on standard 230V power
- Operating range of between 60 and 110° F at 50% RH
- Easy-access hinged panel with Kwikloks

\$9,595  
(800) 972-6600  
www.atlassales.com



## KwiKool SPLAC2421

The KwiKool SPLAC2421 is an air-cooled split system ideal for cooling sealed spaces that don't have access to an open area above the ceiling, such as in laboratory and clean-room environments. The SPLAC2421's condenser and evaporator are separated by a 20-foot-long flexible cable.

Best For: Sealed areas, labs, or clean rooms

- Provides 23,500 BTU/hr of cool air at 95° F at 60% RH
- Operates on standard 230V power
- Operating range of between 60 and 110° F at 50% RH
- Separate condenser and evaporator design

\$5,695  
(800) 594-5665  
www.kwikool.com



## Data Aire DX Series

The Data Aire DX Series product line consists of floor-mounted units in 6- to 30-ton capacities. All DX models have two compressor circuits and steam generator humidifiers. The line can be air-cooled or water/glycol-cooled, and all feature the DAP (Data Alarm Processor) III for unit control. The Data Aire DX Series is designed for either upflow or downflow air discharge applications.

Best For: Medium-sized and large data center installations

- Multilevel password access
- All settings accessible from face of panel
- Factory-calibrated temperature and humidity sensors
- All programmed settings saved in EEPROM
- Battery backup for historical data

(800) 347-2473  
www.dataaire.com



## Data Aire LCS Series

Data Aire's LCS (Large Ceiling Systems) product line delivers cooling capacities that range from 6 to 13 tons, making them suitable for medium-sized and large data center installations. Data Aire created the LCS line to address high-density computing hot spots without taking up valuable floor space. LCS is available in either single- or dual-circuit DX units or chilled water.

Best For: Medium-sized and large data center installations with limited floor space

- Available in air-cooled and water/glycol-cooled versions
- Mini Data Alarm Processor-II wall-mounted, 16-character control panel
- Automatic and manual diagnostics sequences to ease troubleshooting
- Logs minimum and maximum temperature and humidity readings
- Multilevel password access

(800) 347-2473  
www.dataaire.com



## Data Aire Data Temp Series

Data Aire's Data Temp product line consists of floor-mounted models available in 2- to 5-ton cooling capacities in either DX or chilled-water versions. The Data Temp coolers all include the DAP III microprocessor, which gives users a variety of control options, unit monitoring capabilities, and warnings.

Best For: Smaller data centers or where a moderate amount of cooling is required

- Multilevel password access
- All settings accessible from face of panel
- Factory-calibrated temperature and humidity sensors
- All programmed settings saved in EEPROM
- Battery backup for historical data

(800) 347-2473  
www.dataaire.com



## Data Aire Mini-Plus Ceiling Systems

Data Aire's Mini-Plus Ceiling systems are designed to be used in above-ceiling applications. The Mini-Plus Ceiling systems come in 2.5- to 5-ton cooling capacities in either DX or chilled-water cooling varieties. Data Aire offers these systems as either packaged or split systems. Mini-Plus Ceiling systems also support an optional communication card that lets the system interface with computer-based control systems.

Best For: Ducted installation in above-ceiling applications

- Available as a split (evaporator and condensing unit separate) or packaged system
- Includes a thermostat and sub-base for remote wall mounting
- Prewired capacitors, relays, and control transformers
- Removable steel panels are insulated for quiet and efficient operation
- Two- and four-year extended compressor warranties available

(800) 347-2473  
www.dataaire.com



## MaxPower CoolCube 10

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RIM Tops Smartphone Sales

Research In Motion’s BlackBerry Curve outsold Apple’s iPhone in the first quarter, according to the NPD Group’s Smartphone Market Update. Three of the five best-selling smartphones were BlackBerrys; the touchscreen BlackBerry Storm was the third-most-popular smartphone, and the BlackBerry Pearl was in fourth place. NPD Group credits the Curve’s popularity to the fact that it’s less expensive, more familiar, and more widely available than the iPhone. The Curve is currently for sale from the four major U.S. carriers. Despite the slip, Apple’s iPhone 3G handed AT&T 1.6 million new subscribers. T-Mobile’s Android-based G1 placed fifth for the quarter, having sold more than 1 million units since its debut in October.

Qualcomm & Broadcom Settle Patent Dispute

Communications company Qualcomm agreed to pay rival Broadcom \$891 million over four years, putting an end to patent litigations between the two that have spanned several years. In addition to Qualcomm’s settlement payment, the companies will exchange rights to one another’s patents, and Broadcom has agreed to dismiss antitrust complaints it filed in South Korea and Europe. The settlement ends a series of lawsuits involving payments of royalties between the two companies and fair licensing terms and will allow Broadcom to expand its reach in the cellular market. The settlement payment will undoubtedly serve as a boon to Broadcom, which is in the process of attempting to take over Emulex.



EU Wants United States To Share Control Of ICANN

EU Commissioner Viviane Reding says in the future, a 12-nation group should oversee ICANN, or the Internet Corporation for Assigned Names and Numbers. The United States currently controls ICANN. The organization is headquartered in Marina Del Rey, Calif., and is responsible for a number of Internet-related tasks, including assigning IP addresses. It is overseen by the U.S. Department of Commerce. Reding says the United States has done a fair job of overseeing ICANN thus far but contends that it’s not a tenable situation to leave such an important task to one department in one country’s government.

Survey Shows Increase In IT Investments

According to a survey of more than 500 IT professionals conducted by ISACA, more than 25% of enterprises are upping their IT investments this year. Of the more than 500 U.S. IT professionals who responded, 69% indicate that their companies are gaining 50 to 100% of the anticipated value from their IT investments. The biggest benefits from IT investments include improved customer service (31.2%), reduced costs (24.2%), and new or improved products and services (17.7%). About 52% of companies understand and use some form of investment framework.

Cloud Contemplation

Continued from Page 1

more flexible to react to the dynamic needs of your business, while at the same time saving you on capital expenses and operating costs. However, today, not all IT initiatives require this level of agility, so understanding those business requirements where agility is critical enables you to identify good candidates for moving to the cloud. Once you have identified those candidates, the decision is determined by a number of factors,” Malcolm explains.

For example, he asks, is the purpose of moving to the cloud a temporary project or a permanent/ongoing initiative? How strategic or core is it to the purpose of your business? What are your security and regulatory compliance requirements? What technology requirements must be satisfied, such as availability, operating systems, and applications? Finally, how will the financial investment be made?

According to Graham, data centers and enterprise operations fall into one of four classifications: quasi-independent IT and data center operations (or Level 1); centralized leadership and data center operations (Level 2); vendor-integrated operations

(Level 3); or fully integrated, flexible operations (Level 4). Most data centers can be classified as Level 1 and Level 2, and Graham says they will struggle to achieve meaningful results from the cloud. On the other hand, operations in the Level 3 or Level 4 areas are most likely to utilize cloud computing.

“Most companies cycle between Level 1 and Level 2, and even ones that achieve Level 3 or 4 can fall back to a lower level as a result of acquisitions, divestitures, or reorganization. Once a company gets to Level 3 or Level 4, they fully understand how to address critical areas such as security and have standardized their systems interactions, thus enabling them to either adopt cloud computing within the enterprise or use the common cloud infrastructure for some or all of the company’s IT needs,” Graham says.

Special Cases

Although the range of today’s cloud services is sufficiently broad enough to accommodate a wide range of businesses and organizations, there remain concerns for certain data centers. For example, multinational enterprises might have unique concerns about

Impact On IT Departments

At first glance, cloud computing could appear as a savior to IT departments, helping to free previously clogged resources and overextended staff. Upon closer inspection, these services can require changes in the way IT approaches its overall environment and existence in an organization’s business.

“IT will have to develop its business acumen because they will have to become much more of a strategic sourcing organization rather than a technology management organization,” says Rebecca Lawson, director of service management and cloud solutions for HP (www.hp.com). “With so many service providers [and] so many service-based offerings in the cloud, the smart IT shops will begin developing richer sourcing skills, as well as multivendor management skills.”

On the plus side, IT departments are likely to experience upticks in unification and coordination when it comes to server, network, and server administration. Dave Malcolm, chief technology officer of Surgient (www.surgient.com), notes that there are higher levels of collaboration required in the implementation and operations of cloud-based infrastructure between these IT functions.

“We have seen an increase in the investment of architecture, design, and implementation of new IT services vs. the lower-level administration and management tasks for delivery of IT services due to the automation that comes with cloud infrastructure implementations. I guess there is always the opportunity to reduce IT staff, but that is not something we have seen in our experience,” Malcolm says.

Get More From Existing Equipment

Continued from Page 1

believes that investing in an automated environmental monitoring system is a small price to pay for data centers to ensure against potential heat spikes that could significantly reduce the lifespan of servers and other necessary networking components such as routers and switches. Cullen says, “Heat and humidity, even in slightly elevated amounts, can damage a variety of equipment.”

“As to keeping older gear in play longer, it’s really a matter of blocking and tackling—knowing the workloads well, tuning and pruning as needed, being disciplined about how the systems are managed. It’s much like keeping an older car going for as long as possible. It’s not rocket science, it’s just careful, disciplined, economically minded maintenance and upkeep,” adds Jonathan Eunice, principal IT advisor for Illuminata.

Virtualization

“Resources can also be more aggressively load balanced using tools like virtualization so you make the best use of capacity and [ensure] that loads are dynamically shifted to appropriate hardware based on need so you make the best use of the performance you already have,” Enderle adds. However, he cautions to be sure to include standby hosting because failures will come up with this model, and when load exceeds capacity, there will need to be alternative available resources.

Eunice sees virtualization as the first and foremost tool one would use today to get longer usable life out of equipment. “Generally, though, servers should be spec’d for virtualization—plenty of processor cores, loads of memory, good I/O and storage subsystems,” he advises.

But that strategy can require an investment cycle. “Despite the higher ROI, new gear can be a hard thing to justify. The same applies in storage, where features like thin provisioning, pooled storage capacity, IP-accessibility, and built-in deduplication make for long-lived investments—but if you don’t have those things now, it often requires an investment cycle to get there,” says Eunice, who echoed the same tips for facilities equipment including HVAC and power distribution.

Storage Shelf Life

Bob Fine, director of product marketing at Compellent (www.compellent.com), also cites virtualization as a way of extending asset life cycles, especially when it comes to storage. “By utilizing technologies such as virtualization and using storage equipment that can scale to accommodate future storage needs, customers can avoid expensive rip-and-replace upgrades and extend the life cycles of their existing assets.”

Fine also suggests two options for stretching storage life cycles—automated tiered storage and SRM (storage resource management) applications. When implementing a

moving to the cloud because compliance and security requirements can differ from country to country, says Rebecca Lawson, director of service management and cloud solutions for HP (www.hp.com). Similarly, she points to enterprises that are highly transaction-based as special cases in the cloud because they place plenty of value on how transactions happen, where and when they occur, and what happens during an outage.

Along similar lines, Lawson identifies security, privacy, and governance as concerns for organizations in the health, education, and government industries, even while many have already recognized the potential of cloud computing and are already using or exploring cloud offerings in some form.

“[The cloud] has raised legitimate concerns about security, privacy, accountability, and data/operational integrity that will precipitate review and may result in new or revised policy in the future. For example, certification and accreditation for FISMA [Federal Information Security Management Act] compliance may require detailed knowledge of a system’s location, hardware, and software before authority to operate can be given, yet such information may not be available for all cloud services,” Lawson says.

Application Accommodation

Surgient’s Malcolm warns that the primary barrier for organizations considering an internal cloud is whether the cloud supports its operating systems and applications. If the applications targeted for the cloud cannot be run in a virtualized environment or on a dynamic computing infrastructure, the move to the cloud isn’t going to work.

“Next would be determining if there is technical expertise to implement and operate a cloud-based environment. . . . For those looking to leverage an external cloud provider, you have the same barrier around whether your applications can run in the cloud, but beyond that, other barriers include whether the provider can meet my uptime, availability, and security requirements and SLAs. If you cannot find a provider that meets these critical requirements, then it is a show-stopper,” Malcolm says. [E]



# Services In The Cloud

## Cloud Computing Offerings Fall Into Several Categories, All With The Goal Of Streamlining Operations

by John Brandon

THE DECISION TO OPERATE IT services in the cloud is not a trivial matter. In a data center, you may be up and running with a storage array, servers, tape backup, and a host of other computing platforms, all of which need careful monitoring and upkeep to ensure maximum performance. If you decide to offload some of these activities to a cloud provider, it's a good idea to know the kinds of services that are available and how each one can present some clear benefits to business continuity.

"The huge advantages include eliminating capital expenditures, increasing flexibility, and reducing costs," says Thorsten von Eicken, CTO at RightScale (www.rightscale.com). "By using servers in the cloud, small businesses can get out of the expense of building out server rooms and buying hardware assets. Operating in the cloud reduces headaches, reduces costs, and increases flexibility."

### Application Hosting

One of the most common uses of cloud computing for a small to midsized enterprise is application hosting. The advantage is that the technical infrastructure for applications—whether security, bandwidth, network administration, or backup—is all handled by the cloud provider. In many cases, the cloud service has specific requirements about the types of supported applications, and service-level agreements vary among vendors. It's a good idea to consider whether the cloud provider has any guarantees about application availability and can provide some assurance about how to transition from internal hosting to external hosting (and back again, if you decide to bring hosting back into the data center).

Application hosting is sometimes called SaaS, or software as a service, and refers to the idea of an application provider making sure that enterprise users have real-time access to the applications they need, both from the corporate office and from a mobile device.

### Online Communication Services

Online communication is another popular area for hosted services. For example, Web mail is a cloud service in which the provider handles all email processing, including backups, email forwarding, attachments, and storage. For an SME, the advantage is in the infrastructure required, which is often one of

the greatest data-processing stress points because of the reliance on email in business. Some of the issues to consider with email hosting are compliance with industry regulations in the event of a discovery for data breaches, encryption for sensitive communication, and extended services for email such as long-term archiving.

On a similar note, although it may be easy to overlook as a cloud service, business-oriented social networking—and its related customer relationship management activities—is also a viable cloud service. Here, the service runs entirely on the Web and allows business associates to communicate through instant messaging, email, and even videoconferencing to keep communication open and ongoing. This kind of social networking in the



cloud, at least for business use, is a growing trend and serves as a good example of a service that is more difficult to offer internally in a data center.

### Storage & Archiving

Another broad category of cloud computing is data storage, sometimes called data as a service, or DaaS. Storage in the cloud is one of the more controversial aspects of cloud service offerings because it means that your company is not actually storing data; however, it is also one of the prime candidates for offloading to a provider because the cloud is "elastic" in the sense that it can expand and fluctuate according to your needs.

"[Smaller] organizations find that the economies of scale provided by the cloud are superior to maintaining substantial on-premise IT infrastructure," says Miko

### Key Points

- Cloud services are a good match for SMEs because they allow greater flexibility to companies that may not otherwise have the budgets for expansion.
- Service-level agreements are key, especially in relation to compliance issues that arise with data storage.
- Messaging and social networking are becoming more viable options for hosting.

Matsumura, author of the book "SOA for Dummies" and CTO at Software AG (www.softwareag.com). "For larger enterprises, it will be challenging in the midterm to integrate both on- and off-premise applications and infrastructure."

As another less-common cloud service, some providers also offer a way to do off-premise backup and long-term archiving to the cloud, usually through a gateway that runs on-premise and offloads data to another provider. Like data storage in the cloud, data archiving is another controversial service because it means critical business data is stored offsite. But as in data storage, the advantages are in elasticity where there are no local tape storage systems that can be overloaded and the cloud can expand with the needs of a company. Cloud providers can offer varying levels of data archiving; for example, you may decide to offload your email archiving but not application data archiving.

### Infrastructure Hosting

For an SME, it is also possible to host a compute infrastructure in the cloud—all of the services a data center could provide, such as application hosting, email, and storage. Infrastructure hosting is done in such a way that a small to medium-sized company can choose to expand quickly without an investment in hardware or software because all compute functions are hosted by an external provider. Infrastructure hosting companies can provide the consulting and services necessary to move to a cloud computing model where all services are external and none are housed at the business location.

Overall, cloud computing services are a good match for the SME market because work and infrastructure resources are often tapped to the extreme, and having a provider that can help with those services and expand with your data needs is invaluable, especially in a stressed economy. [P]

### QLogic Acquires NetXen

Storage networking company QLogic announced its acquisition of NetXen, maker of networking equipment, for \$21 million in cash. With the acquisition, QLogic will be able to integrate NetXen's Gigabit and 10 Gigabit Ethernet adapters into its storage networking solutions, moving toward a converged networking system—a scenario that many see as the future of data center networking. QLogic's purchase follows in the consolidation-minded footsteps of such companies as Cisco and Broadcom, the latter of which just made a bid for a hostile takeover of Emulex.

### NetApp Agrees To Settlement

According to the U.S. Department of Justice, NetApp has agreed to pay \$128 million in a settlement with the U.S. government to resolve allegations by the General Services Administration that NetApp made untrue statements to the GSA about discounts it provided other customers but did not offer to government agencies. According to a NetApp filing with the Securities and Exchange Commission, NetApp will not have to admit to wrongdoing under the terms of the settlement. Igor Kapuscinski, NetApp's former federal systems manager, filed the original lawsuit as part of the False Claims Act, which lets private citizens bring these types of lawsuits.

### Study Shows Companies Are Still Refreshing PCs

A study commissioned by Intel and conducted by Wipro Product Strategy and Services found that two-thirds of enterprise-level companies in North America plan to maintain their PC refresh rates this year in spite of the recent economic situation. The study interviewed CIOs and IT decision-makers at 106 companies in both North America and Europe. About 60% of companies say they plan to refresh their client PC fleets at the same rate as before the economic downturn. About 10% of companies say they plan to increase their refresh patterns. Companies are choosing to continue refreshing PCs because of new applications that require updated hardware, security, energy efficiency, and cost-of-ownership concerns.

### Microsoft Makes Another Round Of Job Cuts

As part of its cost-cutting initiatives, Microsoft announced early this month it laid off another 3,000 employees, 1,200 of which are in its native state of Washington. The layoffs are in addition to the 1,400 jobs cut just months ago; the company announced in January that it would eliminate 5,000 jobs in an effort to save money. Laid-off employees will be given severance packages and may be rehired later in positions the company expects to create in the coming year. Microsoft CEO Steve Ballmer hasn't ruled out future cuts if conditions do not improve.



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## Index Attempts To Read Investor Confidence

Mark Cannice has been conducting quarterly research on Silicon Valley venture capitalists since 2004 and has shown, in academic papers, links between venture capitalist and liquidity events. In his latest Silicon Valley Venture Capitalist Confidence Index, the first quarter of this year posted a venture capitalist confidence of 3.03 (on a five-point scale), which ended a five-quarter trend of lows. Last quarter's reading of 2.77 represented a five-year low.



Cannice says the 3.03 reading shows venture capitalists are more optimistic than they were last quarter. The upturn is particularly notable because venture capitalists tend to be a leading indicator for the health of the economy, Cannice says, which hopefully means we should see a more optimistic economic climate and new investments. According to Cannice, “As venture capitalists take a long-term perspective in shepherding their portfolio firm over years, rather than quarters, investments made today are expected to grow and blossom on the other side of the current economic malaise.”

### Opportunity To Build

The study notes that some venture capitalists see the downturn in the economy as an opportunity to build. For example, Cannice notes that true entrepreneurs will continue to find ways of moving their ideas forward. The survey also indicates that other venture capitalists expect the current economic upheaval to provide sophisticated talent into the entrepreneurial economy. The study notes that “there are more skilled people to recruit, scarce resources are less scarce, and the eventual customers are more open to ideas for solving problems in new, innovative, and less costly ways.”

Some financial sectors were viewed as having a more optimistic future than others. For example, Cannice says, there's increased support for the development of clean energy alternatives. Not all aspects were positive, though, as some venture capitalists surveyed noted it may be difficult for some young companies to get the money they need to grow. Some experts also suggest that the U.S. government is taking actions making it more difficult for capital to form, which would allow entrepreneurs to build their companies. In particular, Cannice says “thousands of entrepreneurs have returned to India and China over the last couple of years and billions of investment capital have followed.”

by Nathan Lake

# The Cloud Crowd

## Enterprises From All Walks Of IT Life Are Climbing Aboard The Cloud Computing Wagon

by Drew Robb

• • •

**WHO IS JUMPING INTO THE CLOUD?** Although “everybody” may be something of an exaggeration, the number of implementations appears to be growing exponentially as the number of cloud-supported storage, backup, and application services multiplies and costs continue to plummet.

“Traction for cloud computing has been good in the low-end consumer, small office/home office (SOHO), and the lower end of SME environments,” says Greg Schulz, an analyst with StorageIO Group. “Storage space-for-rent solutions, for instance, are plentiful, with more popping up every day.”

### The Cloud's Appeal

Although cloud computing began as a way of obtaining cheap, hassle-free storage, it is fast evolving into a tool that SMEs can use to facilitate the provision of better services at a lower cost. In essence, cloud computing makes it possible for small enterprises to focus on their core competencies without having to invest in a bloated IT infrastructure.

Prospects for cloud services come in all shapes and sizes. Some companies are adopting it as a simple way to make use of a key application without having to maintain the software and associated hardware internally. Another group of users sees the cloud as a way to cope with burgeoning storage capacity needs. After years of having to add servers or disk arrays on a seemingly never-ending basis, they have realized that offloading the storage functions to the cloud dispenses with a large amount of internal plumbing.

### A Hybrid Model

A good example is the case of online backup and storage provider ElephantDrive ([www.elephantdrive.com](http://www.elephantdrive.com)), a user of Amazon's Simple Storage Service, or S3. The

initial plan was to use S3 solely during a migration to a new data center. That has now been extended to encompass a majority of business operations and data storage.

“Today we are using a hybrid solution,” says Ben Widhelm, president and CTO of ElephantDrive. “Components are virtualized in a manner that allows for them



to be resident in a public cloud, an internally managed data center, or both.”

Some data and applications, Widhelm says, are far too important to rely on a cloud. Operations that are mission-critical, are computationally expensive, and/or deal with large data sets are poorly suited for a cloud computing platform, as it could result

proprietary systems over a longer time frame.”

### Avoiding Upgrades

Some SMEs are looking to the cloud as a way to avoid expensive infrastructure upgrades or as a way to bring down the costs of colocation. California Southern University was established in 1978 to meet the educational needs for working adults

who could not attend a traditional college. Its 40 employees provide access to bachelor's, master's, and doctoral degrees through distance and online training.

Although Cal Southern has its own data center facility with plenty of expansion space, power constraints made it difficult to add more servers.

“Initially, we looked at colocation, but that entailed a steep monthly fee,” says Kevin Mack, senior network engineer for CSU. “Cloud computing was a less expensive option so we just jumped in.”

CSU contacted a couple of cloud service providers to initially set up a way to alleviate strain on the data center. Cal Southern has 1,000 students submitting homework and taking classes online, as well as professors logging in to post grades and more. All of this traffic created a bottleneck at the CSU data center based in Santa Ana, Calif. Mack's plan was to try out cloud computing for failover.

“Within two days, we duplicated a Web server and SQL server in the cloud and

**“Storage as a service provides capacity management, geographic redundancy, and an optimal delivery path to an end user. But after data reaches a certain age, there are power and cost benefits to moving the data internally.”**

- ElephantDrive's Ben Widhelm

## Cloud Stimulus Package

With all the talk about the economy and stimulus bills, it could well be that more and more SMEs will take the leap of faith to cloud computing as the purse strings tighten. CFOs and CEOs are going to be demanding low upfront costs for any IT initiatives. Thus, the cloud could potentially win out over more immediately expensive hardware acquisitions.

“The appeal of the plug-in, turn-on IT service is compelling in an economy that forces companies to look away from capital acquisition in favor of off-balance sheet methods like leasing and the cloud pay-as-you-go model,” says John Webster, an analyst at Illuminata.


in high costs and unpredictable results. Using the cloud for part of the storage layer, however, was a natural decision for the company.

“Storage as a service provides capacity management, geographic redundancy, and an optimal delivery path to an end user,” says Widhelm. “But after data reaches a certain age, there are power and cost benefits to moving the data internally.”

SMEs that don't have enough resources to run their own data center will probably be adopting cloud services soon. “The advantages are flexible scalability, high availability and performance, reduced complexity, and, in most cases, cost savings,” says Widhelm. “At the end of the day, I think you'll see more resource-starved companies opting for the cloud for new deployment needs and eventually replacing

tested everything side-by-side to see how fast the servers could upload images, compared to response times on our internal servers,” Mack says. “After 30 days of thorough testing, we realized that the efficiency of cloud computing offered rapid access for our users.”

Mack says some IT managers might get nervous because they can't physically see their servers. In his case, he can log into an interface that gives him control over everything on the server.

“Even if you can't see the actual server, you can always see your data and what's running on it,” says Mack. “Based on my experience, cloud computing has zero downtime. Our organization could pick up and move and my physical servers might be down for a couple of days, but my data would still be accessible in the cloud.” 



# A Look At The Forecast

## Experts Predict An Increase In Cloud Computing In Data Centers' Future

by Carmi Levy

ALTHOUGH CLOUD COMPUTING is one of the hottest topics in the tech world today, there's little consensus over how to define it. The future is a much different story. Everyone seems to agree the space will evolve radically. This change in thinking—and acting—is already underway.

“Over the past two to three years, we’ve gone from a state where clients were simply trying to learn more about what cloud computing was about to a state where more of them are creating private clouds, consuming public cloud services, and investing time and energy to apply these technologies to their business problems,” says Dennis Quan, IBM’s director of autonomic computing. “Against this backdrop, it’s easy to anticipate very rapid growth compared to what we’ve seen in previous years.”

### An Accelerating Rate Of Change

Quan isn’t alone. A broad range of experts agree that cloud computing is evolving rapidly. “Just a short time ago, organizations considered the cloud as a delivery model,” says Patti Dock, COO of DataMotion ([www.datamotion.com](http://www.datamotion.com)). “Today, more businesses are looking to the cloud as a means to reduce expenses, increase productivity, and quickly recognize savings.”

She continues, “This hosted ‘productivity model’ will include all the basics that SaaS models address, such as availability and scalability, but will also pay particular attention to visibility, transparency, automation, and adding intelligence to information in motion. Data has value when it’s in motion, so applying intelligence to information so it knows how to traverse the cloud will be key.”

As promising as that future looks, security remains a stumbling block to greater adoption. “Until we get over our fear that it’s not as secure as what we’ve been using all along, we’re not necessarily going to adopt full mainstream cloud computing,” says Sheryl Kingstone, director of enterprise

applications with Yankee Group. “In the meantime, we’ll take on pieces of it that will make our lives easier. But it’ll take years before we can prove that it’s fundamentally ready to take over from more conventional approaches.”

### Fear Of The Future

Kingstone says IT professionals who’ve spent their careers looking after tangible infrastructure need to update their thinking. “They have to realize that they don’t obsolete themselves out of a career path,” says Kingstone. “By embracing cloud computing,



they make their jobs less maintenance-intensive. They spend less time keeping the lights on, which gives them more time to be much more strategic.”

Even so, cloud computing has already come a long way. “Just over a decade ago, the world was saying that software could never be delivered as a service. IT was the biggest bottleneck back then, refusing to accept its potential,” says Kingstone. “Now they realize that this approach really helps them.”

The benefits will extend more deeply into the enterprise over the next few years. “I think on-demand business services for fulfillment, order management, and other key business processes will expand the relevance of cloud services beyond the simple utility storage and compute power,” says Mark Skilton, solution director for global business solutions for Computer Sciences ([www.csc.com](http://www.csc.com)). “I expect the desktop virtualization and the storage area to be the bridge point into the cloud as companies move low-cost, low-priority archive and data into the cloud. I think once this has demystified the cloud, it will then follow with other major integration and hosting developments in the cloud.”

### Integration Is Key

That demystified future, Yankee Group’s Kingstone says, will need to be an integrated one, as well.

“Right now, you’ve got a huge groundswell of everyone wanting mobile devices and apps,” she says. “There’s a huge bubble of social apps, collaboration, and connectivity. If you look at the network infrastructure, cloud services, and enterprise apps as SaaS, they’re all independent

### Key Points

- Security is a main obstacle to adoption today.
- Without universal standards, growth will be hampered as long as each vendor takes its own approach to data and application integration.
- Data management, accountabilities, and liabilities all change significantly when everything resides in the cloud.

today. In the future, you’ll be able to get connected, collaborate, and do anything from anywhere on any device. You think you can do that today, but you can’t. The future is really going to be how we connect all these bubbles and seamlessly put them all into comprehensive business applications.”

And as applications continue their inevitable migrations into the cloud, CSC’s Skilton warns against assuming that’s the most important story. It isn’t. “The biggest game changer will not necessarily be the migration of application software into the cloud, but the movement of the services around software into a cloud-based model,” says Skilton. “This includes integration and customization services and the ability for enterprises to leverage these as tools to generate a competitive advantage.”

Whatever the future looks like, Yaron Sinai, CEO and founder of SaaS-based project management tool vendor Elementool ([www.elementool.com](http://www.elementool.com)), says it won’t happen until consistent Web standards are adopted for the cloud computing space.

“We need better options for different systems from different vendors to communicate with one another,” he says, adding that industry-wide standards must evolve before cloud computing becomes truly universal.

This opens up opportunities for forward-thinking vendors and resellers. Sinai says one-stop shopping will define tomorrow’s cloud computing marketplace.

“You need to have people who are specialized in integrating various systems,” says Sinai. “Companies prefer to work with vendors that provide as many solutions as possible under the same umbrella so they don’t have to spend time and money on integration.”

### Processes Matter, Too

The future isn’t all about technology, however. Changes to processes and workflows could be even more significant.

“We’ll need ways to ensure public cloud services being consumed by internal constituents of an organization meet up with the policies and practices established for that organization,” says IBM’s Quan. “We’re in the early stages of that, but over time, we can expect security models and policies to become a lot more explicit and finer-grained so you have better control over the security of the information being put into the cloud.”

Quan says this is essential to ensuring smooth integration of cloud-based services into business and management processes.

Whatever form cloud-based services take on, Yankee Group’s Kingstone says it’s becoming increasingly clear that the cloud-based paradigm will eventually be a virtual necessity for business success.

“If you have not drunk the Kool-Aid, you’re the generation that will die out,” says Kingstone. “I like to compare companies that have no plans and refuse to adopt things like mashups, Web services, and social media to dinosaurs.”

### News

## New Federal CTO To Help Shape Technology Adoption

Of Special Interest To:  
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Data Centers

President Barack Obama announced his appointment of Aneesh Chopra to a new position as the nation’s federal chief technology officer. Chopra, together with Vivek Kundra, the new federal chief information officer, and Jeffrey Zients, the new federal chief performance officer, will work to help the government and country as a whole adopt and implement new technology.

Pending confirmation, CPO Zients will be responsible for streamlining processes, reducing costs, and specifying best practices in an effort to make the government more efficient. Obama also says Zients may have a hand in helping to eliminate wasteful or ineffective government programs. As CIO, Kundra will be responsible for setting technology policy across the government and using technology to improve security, ensure transparency, and lower costs. In the Office of Management and Budget, Kundra will oversee the federal government’s annual technology budget. Chopra will maintain a higher profile as CTO, promoting innovation, supervising the health IT initiative, and encouraging technology-related economic development throughout the country.

### Broad Technology Impact

According to David McClure, Gartner managing vice president of government research worldwide, Obama is looking to the CTO to focus on broad technology impact issues and how technology can improve education, energy conservation/renewal, health care, cyber security, and citizen and business interactions with government. Chopra will report directly to the White House Office of Science and Technology Policy Director John Holdren



but will likely have direct access to the President. Chopra’s input will help determine how IT research and development money is spent and ensure that R&D has a trickledown effect on both the public and private organizations.

In a research paper, McClure wrote, “CTOs in government generally function either as internal stewards of the more technical IT operations, infrastructure, and architecture or, alternatively, as technology strategists focused on industry directions and innovations that are applicable to their specific agency environments.” When it comes to Chopra’s role, McClure says, “[He] may have a direct interface with technology directions in industry and the potential for use in government program and policy areas in general,” but McClure says the coming weeks and months will reveal more about Chopra’s actual role as the administration’s new CTO.

by Andrew Leibman

## Survey Paints A Bright Future For Cloud Computing

According to data from a survey conducted in February by DataMotion and Frost & Sullivan about the value proposition of cloud computing, cloud services are gaining momentum in the small to midsized enterprise venue.

- Of the IT professionals surveyed, 36% report cloud solutions are being reviewed on a product-by-product basis.
- Additionally, 50% believe most processes will soon be cloud-based.
- Only 8% express skepticism about solutions in the cloud.



NETWORKING & VPN



**Black Box Optinet helps enterprises control bandwidth costs, stop Internet threats, and increase employee productivity.**

Ranges from \$2,279.95 for Optinet™ Standard Traffic Profile with 5Mbps for up to 250 Users (FE408005AA) to \$37,499.95 for Optinet 100% HTTPS Traffic Capable with 200Mbps for up to 20,000 Users (FE408200XA)

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Minimize Non-Work-Related Internet Use

# Black Box Optinet

Optinet™ from Black Box is a secure Internet gateway appliance that sits on your ISP broadband link between your corporate fire-wall and network. The convenient, powerful Web-based management console comes with everything you need to shape bandwidth, filter content, and eliminate threats.

Optinet enables you to focus your employees' Web browsing and Internet application use by allotting more bandwidth to mission-critical sites and applications. You'll know exactly how the Internet is used by your employees. Give users access to the content they need with real-time, dynamic URL categorization; URL database matching; URL keyword search; and even deep HTML inspection. Frequent, automatic reports protect your organization from emerging dangers on the Internet.

Optinet provides control in three ways: First, it enables application traffic monitoring so you can determine the appropriate priorities and limits. Second, you can set the

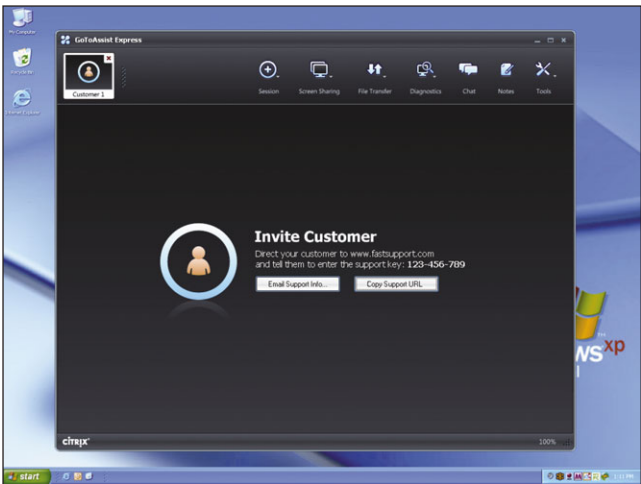
Internet policies and restrictions and automatically enforce them. Third, you can view detailed reports on use activity, application traffic, Internet threats, and more, giving you total visibility and enhancing your ability to identify and fix problems.

Additionally, protecting your company from existing and continually evolving online threats is a top priority. Optinet complements your firewall by providing hourly filter avoidance updates and dynamic content analysis that identifies and locks out dangerous anonymous proxies. Optinet also blocks malware and viruses with advanced database matching and client spyware removal capabilities.

Black Box offers a complete range of Optinet devices for any size of enterprise, government organization, school, or university.



NETWORKING & VPN



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Lowering costs and increasing productivity are always at the top of a company's priority list. Citrix Online offers solutions that can not only increase productivity and save on costs, but also bolster customer satisfaction and company reputation.

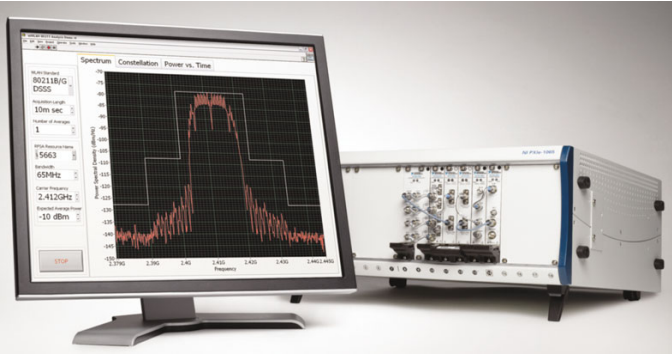
The GoToAssist® Express™ remote-support solution allows individual users and small businesses to provide instant online technical support to their clients. Customers can quickly receive simple, Web-based technical support, which in turn increases their satisfaction with the company. In addition to improving call-resolution times, solving more problems online also saves on support and travel costs. GoToAssist Express lets businesses offer support to both Mac and PC users. With

GoToAssist Express, companies can sign up online and set up their service in just a few minutes.

For larger organizations, Citrix Online offers its GoToAssist® Corporate™ service. Companies can remotely support all end users, regardless of their location, and enable a special team collaboration tool to resolve complex issues that may arise. GoToAssist Corporate also features quick and secure access to remote systems, as well as built-in surveys and reports that help companies demonstrate quick ROI.



NETWORKING & VPN



**The WLAN Measurement Suite from National Instruments is a testing and measurement solution that provides generation and analysis functions for IEEE 802.11a/b/g standards.**

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Measure Signals At Top Speed

# National Instruments WLAN Measurement Suite

National Instruments' WLAN Measurement Suite can help enterprises perform common RF measurements up to four times faster than other modular instrumentation solutions and 10 times faster than standard box instruments. In order to deliver quicker, more flexible testing for IEEE 802.11a/b/g standards, the NI WLAN Measurement Suite combines National Instruments' software for LabView graphical programming and LabWindows/CVI development environments with NI 6.6GHz PXI Express RF hardware.

Enterprises can also use NI's WLAN Measurement Suite for the testing of up to six more RF communications standards, such as GPS, WiMAX, Bluetooth, and RFID. Also included is

the NI WLAN Analysis Toolkit for physical layer measurements, as well as the NI WLAN Generation Toolkit for RF signal generators. These combined offerings, as well as an upgraded CPU, can significantly speed up an enterprise's measurement times.

Because the WLAN Measurement Suite is software-defined, enterprises can achieve impressive measurement flexibility and throughput. With each multicore CPU evolution, enterprises achieve decreased PXI-based measurement times, leading to maximum measurement performance, increased system longevity, and cost savings. The solution also supports EVM (error vector magnitude) and power measurements.

NETWORKING & VPN

Legacy Optimization Gets A Face-Lift

# Clerity UniKix Release 11.0

UniKix 11.0 is the latest iteration of Clerity's mainframe rehosting software, which is designed to allow IT and data center managers to reduce operating costs while running mission-critical online and batch workloads on open systems platforms.

This most recent release is full of features and enhancements. UniKix is designed to protect existing applications and data investments as users prepare for BPM, SOA, Web Services, and other initiatives.

The complete UniKix 11.0 package is comprised of UniKix TPE (Transaction Processing Environment) software, UniKix BPE (Batch Processing Environment) software, UniKix Manager software, and UniKix Secure software.

New features include increased support, advanced security, and productivity enhancements. UniKix now supports more operating system platforms, including HP Itanium IA64 systems running HP-UX11i versions 2 and 3, IBM POWER systems running AIX 5.3 and greater,

Sun SPARC systems running Solaris 10 and greater, x86 or x64 systems running SuSE Linux Enterprise 10, and IBM System z mainframe systems running SuSE Linux Enterprise 9.

New features include support for CICS user attributes, RACF Groups, additional password parameters, and user ID extensions. Also included is improved batch processing to simplify the rehosting and administering of batch workloads on open systems and enhanced CICS compatibility for online processing features.

**UniKix Release 11.0 is a mainframe rehosting solution designed to substantially cut operating costs.**

UniKix rehosting software is priced on a per CPU core basis, and incremental discounts are applied on large, multiple core systems.

(888) 273-4678

[www.clerity.com](http://www.clerity.com)





SERVERS



The Gemini Series Server and Storage Platforms from AIC let users utilize the full power of the Intel Xeon Processor 5500 Series in servers and storage systems.

Starting at \$3,500 for the Development Kit

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www.aicipc.com



Two Heads Are Better Than One

## AIC Gemini Series Server & Storage Platforms

If you're looking for a bare-bone server or storage platform built around the latest technology for applications that require superior I/O bandwidth, look no further than the Intel Xeon Processor 5500 Series-based Gemini Series Server and Storage platforms from AIC. The offerings feature AIC's exclusive MAX I/O technology, which enables users to forgo pricey PCI Express switches that become necessary with fixed slot configurations and apply the full power of PCI Express to supporting up to 72 PCI Express lanes in any configuration, be it PCI-E, PCI-X, or 32-bit PCI. Gemini is ideally suited to the demands of a range of storage, security, and communications infrastructure applications.

The Gemini's base configuration includes dual LGA1366 sockets that support Intel Xeon 5500 Series processors that operate at between 60 and 130W and run at 2.4 to 2.66GHz. The platform also benefits from Intel's Quick Path Interconnect technology and support for up to six DDR3

RDIMMs per processor for up to 192GB of system memory. The systems also feature six 10/100/1000 Gigabit Ethernet ports, six SATAII ports, onboard AST2050 BMC for IPMI 2.0, and iKVM support. Gemini's Automated Low-Power States feature idles the processor, memory, and I/O controller to conserve energy. Intel Turbo Boost Technology is another breakthrough feature that enables the processor to run at higher-than-stated frequencies when the thermal and power limits allow.

SERVERS



Aberdeen's Stirling servers are powered on Intel Xeon 5500 Series processors and are expandable up to 400TB.

4TB Stirling X308 starts at \$3,595

50TB Stirling X888 starts at about \$18,955

(800) 500-9526

www.aberdeeninc.com



Scalable, Enterprise-Class Storage With Intel Xeon 5500 Power

## Aberdeen Stirling Servers

Exceptional processor performance, dynamic scalability, and increased storage expansion capabilities are benefits promised by Aberdeen with its latest generation of scalable Stirling storage servers. Enterprises across all industries can benefit from the Stirling servers, now powered by Intel Xeon Processor 5500 Series CPUs and the Intel 5520 Chipset. Fully customizable, Stirling enterprise-grade servers are scalable from 4TB to 400TB.

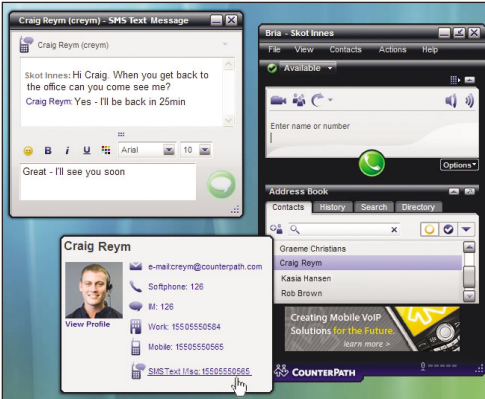
The 5500 Series-based models perform up to two and a quarter times better than the previous generation of Stirling servers and up to nine times better than legacy single-core servers. The new Stirling servers tout an augmented focus on expandability through SAS expansion and support for up to 96GB of three-channel DDR3 memory, up to 32GBps memory bandwidth, a

redundant power chassis, and simultaneous SATA/SAS hard drive integration.

Aberdeen's top-end Stirling X888 can store up to 50TB network-level data, expandable to 400TB with cascading JBOD units and XDas Direct Attached Storage RAID subsystems. Hardware RAID management (RAID 0, 1, 5, 6) is provided via a browser-based interface. With a 5-year limited warranty, Stirling servers are configurable as NAS appliances using Linux- or Windows-based NAS.

Stirling servers are VMware-certified, offer quad-port Gigabit Ethernet support, and are ideal for media streaming, HD video storage, security and gaming surveillance, data backup, near-line storage, and post-production storage.

MESSAGING & TELEPHONY



Messaging Convergence Gateway lets customers send and receive SMS text messages from mobile devices with VoIP.

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Bridging VoIP & Mobile Phones For SMS Texting

## CounterPath Messaging Convergence Gateway

New technologies have overhauled the way we communicate, making it faster, easier, and more efficient. With CounterPath's MCG (Messaging Convergence Gateway), VoIP softphone subscribers can send and receive SMS text messages with their mobile phone numbers, as MCG acts as a gateway within their service provider's infrastructure.

MCG, which is a carrier-based, core-network messaging server, is specifically for fixed VoIP systems with assigned telephone numbers. The MCG provides two-way texting between CounterPath's Bria softphone and mobile devices, which eliminates the need to copy the mobile operator's SMS infrastructure. Neither an SMSC (Short Message Service Center) nor an HLR (Home Location Register) is

needed, which cuts costs and complexity for deploying SMS services to VoIP users. Implementing MCG is designed to be simple for VoIP operators. With overlay to current VoIP infrastructure, there's no HLR/SMSC needed, and there are multiple deployment options (such as onsite and SaaS). MCG also offers service providers expanded adoption of their softphone services.

Subscribers will enjoy the efficiency of streamlined communication, as they can use their PCs to send and receive text messages with their mobile contacts, make voice calls to any device, and send instant messages to PC-based IM applications. The integration with the CounterPath softphone also aims to benefit the customer.

MESSAGING & TELEPHONY



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Only As Much Exchange As You Need

## Hostway Hybrid Exchange Platform

Inexpensive and flexible business-class email is the idea behind Hostway's Hybrid Exchange email platform. The new offering combines routing for both Microsoft Exchange and Hostway SiteMail email systems, allowing Exchange and POP3/IMAP accounts to coexist in the same domain.

The hybrid approach allows businesses to pay monthly per-mailbox fees for Exchange accounts for employees who really need them, such as for collaboration or mobile access from the road via ActiveSync. By creating SiteMail POP accounts for the rest of the staff, organizations can save money. SiteMail compares well to Exchange mail in many respects: It has spam filtering, virus scanning, unlimited forwarding, and browser-based

account access over the Internet.

Hybrid Exchange is easy to get: Existing customers of Hostway's Hosted Microsoft Exchange, SiteMail, and Web-Hosting services can start using Hybrid Exchange right away by adding email accounts using the company's SiteControl management and administration tool. New customers can enjoy the benefits of Hybrid Exchange with no additional fee.

Whatever the ratio of Exchange to SiteMail accounts in your particular organization, you'll be saving money over an all-Exchange workplace. In times like these, any benefit that doesn't lower the bottom line is a big plus.

STORAGE



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Integrates Local & Secure Offsite Backup For Disaster Recovery

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## Barracuda Backup Service

The Barracuda Backup Service is an affordable, integrated local and offsite data backup and disaster recovery solution that combines an onsite appliance with a monthly subscription that replicates data to two offsite locations. Combining local and offsite storage provides the best of both worlds—onsite backups for the fastest restore times and secure, off-site storage for disaster recovery.

Designed for organizations of any size, the Barracuda Backup Server creates a local copy of data and efficiently transfers the data offsite without any additional burden on production servers. Offsite storage is monitored and managed by Barracuda Central as part of the Barracuda Backup Subscription, and tech support and emergency restores are included, as well.



Deployed in varied, complex IT environments, the Barracuda Backup Service protects mission-critical business information, utilizes industry-standard networking protocols to access data for backup, and is compatible with all major operating systems.

The Barracuda Backup Service Web control panel makes it easy to manage and back up data to multiple units at one or more locations—from anywhere. It also provides control of settings, reports, restores, statistics, and account information in order to manage Barracuda Backup Servers and Barracuda Backup Subscription plans. In addition, customers receive automated alert notifications via the Web control panel when conditions affecting backup service are detected.

MESSAGING & TELEPHONY

**Axigen Mail Server 7.0** includes advanced messaging features, such as Push mail and directory synchronization.

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www.axigen.com



EASY. SECURE. POWERFUL. MESSAGING

**Fresh Mobile Email & Centralized Management Tools**

## Axigen Mail Server 7.0

With the addition of Push email, support for Microsoft Exchange ActiveSync, and a new memory management module, the 7.0 release of Axigen Mail Server delivers enhancements that increase productivity and efficiency for enterprises. Axigen Mail Server 7.0 is available for Windows; a variety of Linux OSes; Solaris 10 x86 and Solaris 10 SPARC; and NetBSD 4.0.

Microsoft Exchange ActiveSync support allows workers to synchronize their email, contacts, and Personal Organizer with the Axigen Mail Server. IT staff need only download the Axigen Push Email And PIM Synchronization add-on to add the functionality to Axigen Mail Server 7.0. The software also features an Out Of Office auto-responder that's shared between WebMail and ActiveSync.

For those with an LDAP server, Axigen Mail Server allows accounts and groups in a domain to be synchronized with associated LDAP entries. For a specific account, the Axigen Mail Server can synchronize contact information, as well as the account's quotas and restrictions. For a group, items are paired with LDAP and its members. An Active Directory Users And Computers extension is also available to allow system administrators to configure Axigen accounts' and groups' properties.

Enterprises will also appreciate the 7.0 release's memory management module enhancements. The maximum virtual memory size, up to 4MB, can be specified in the command line, and when the server starts, it can reserve some memory for use in critical conditions.

MESSAGING & TELEPHONY

**Recovery For OST Files**

## DataNumen Advanced Exchange Recovery 2.0

There are many hardware and software reasons, including server crashes or malicious software, that can make offline storage (.OST) files inaccessible. But such files still contain your mail messages and other items of your mail account that you may need. With DataNumen's Advanced Exchange Recovery 2.0, you can recover as much data as possible and save it as Outlook files.

Advanced Exchange Recovery 2.0 makes it easy to retrieve the contents of your mailbox, recovering mail messages, posts, folders, notes, appointments, contacts, and other mail account items from OST files and saving them as Outlook .PST files. Message properties (subject, date, to, from, etc.) and subobjects (attachments, embedded objects) are also recovered.

Because of a byte-level scan performed by an advanced algorithm, the program recovers all possible items in OST files. And it works where other similar solutions fail.



Advanced Exchange Recovery includes the ability to recover password-protected OST files or deleted items in OST files and OST files on any corrupted media. Plus, it can recover mail messages in plain text, RTF, and HTML format.

Other features include:

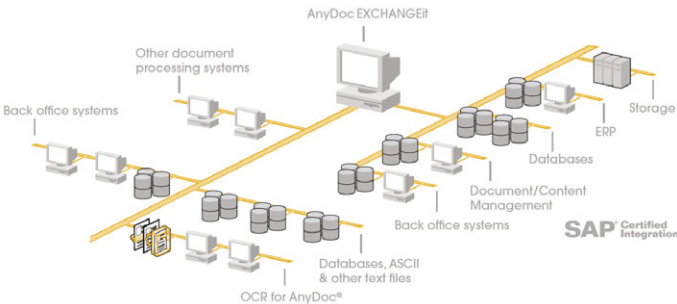
- Ability to convert Exchange OST files to Outlook PST files
- Support for Exchange Server 2007 and Outlook 2007
- The ability to recover and split oversized OST files
- Batch recovery
- Search features to find OST files on the local PC

**DataNumen Advanced Exchange Recovery 2.0** makes it easy to retrieve the contents of your mailbox and save them as Outlook files.

\$249.95 (single-user license)  
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CLIENTS



**A Bridge For Incompatible Data Formats**

## AnyDoc Software AnyDoc EXCHANGEit 5.1.2

When it comes to deploying an end-to-end document-processing tool, most professionals are looking for a seamless, secure flow of data along with up-to-date notifications as process steps are completed. AnyDoc EXCHANGEit 5.1.2 is designed specifically for these purposes.


AnyDoc EXCHANGEit will bridge incompatible data formats with a drag-and-drop data-mapping interface. When you drag and drop information, both source and destination fields are shown on-screen along with all the data-transfer details. This includes source, path, filters, and destinations. Users just need to drag and drop to choose and find corresponding database fields between source and destination.

With AnyDoc EXCHANGEit, you can move captured data and document images to almost any accounting, ERP, ECM, or other back-end system. AnyDoc EXCHANGEit version 5.1.2 includes security upgrades, such as Active Directory group level permissions, data encryption with port level communication, and new options for data transfers.

AnyDoc EXCHANGEit 5.1.2 also includes SAP Certified Integration to allow for flexible data exchange between AnyDoc software and SAP. This lets users quickly capture data from document images to be available in SAP. Users can utilize the customizable file-transfer scheduling and schedule automatic data transfers to happen by the hour, day, week, or month.

**AnyDoc EXCHANGEit 5.1.2** is designed to bridge incompatible data formats with a drag-and-drop data-mapping interface.

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SECURITY



The LogLogic Compliance Manager notifies users of their compliance status, centralizes all compliance-related activities, and provides policy mapping to ensure regulations are met.

Starting at \$37,500  
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## Stay Compliant

# LogLogic Compliance Manager

To stay ahead of the compliance curve, you need dedicated personnel to review logs day in and day out, right? Not with the LogLogic Compliance Manager you don't. LogLogic's new compliance workflow management solution lets organizations automate compliance processes to operate within the bounds of the law and simultaneously take human error out of the equation.

LogLogic Compliance Manager goes above and beyond simple workflows; it also enforces service-level agreements that define who has access to which logs at which time. The offering also delivers insight into the firm's overall compliance status, both in terms of real-time and historical data. To ensure full compliance, LogLogic Compliance Manager efficiently centralizes compliance activities and pertinent communications. In order to specify regulatory control objectives, the offering delivers policy

mapping that outlines compliance reports across LogLogic solutions. The workflow management feature helps users establish a process for scheduling reviews and sending out role-appropriate notifications. The compliance score dashboard delivers a snapshot of the current compliance score to help users meet the organization's compliance goals.

If your organization is subject to the control objectives in the PCI-DSS and Sarbox regulatory frameworks, then the LogLogic Compliance Manager can help because it tracks all review activities, including annotations, approvals, and returns of all reports, to build a comprehensive and bulletproof audit trail.



SECURITY



**SECNAP Network Security SpammerTrap email security protects your email without impacting performance—or your budget**

\$2,999 and up  
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## Building A Better Spammer Trap

# SECNAP SpammerTrap

SECNAP's SpammerTrap lineup of email security appliances spans seven models. Besides highly accurate spam filtering, it provides antivirus, anti-malware, firewall, and both inbound and outbound content filtering and encryption with a claimed success rate at almost 100%. There are SpammerTrap models suitable for enterprise data centers, small businesses, and everything in between.

Recently, the company improved the SpammerTrap family with the addition of hundreds of thousands of new QuickScan signatures for its integrated ClamAV antivirus utility. These precompiled malware detection rules allow the appliance to rapidly unmask spam, phishing attempts, dangerous attachments, and more. The signatures receive updates every four hours. However, thanks to new efficiencies, the updates require less network bandwidth, so they won't become a nuisance.

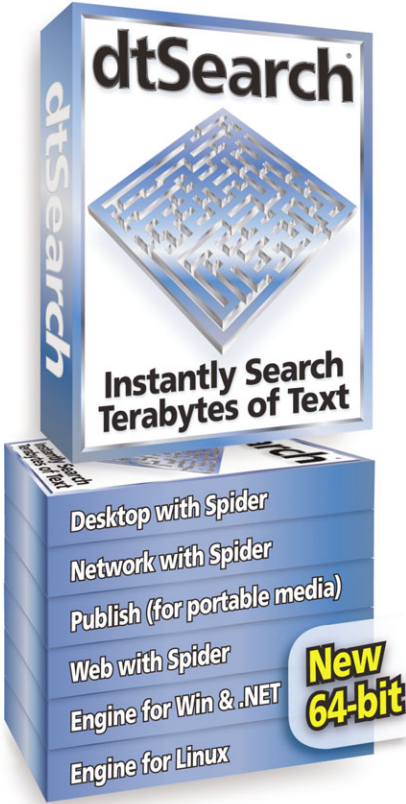
Existing SpammerTrap customers got the new ClamAV QuickScan signatures via a regularly scheduled system update.

Despite its thoroughness—each appliance consults four reputation databases, brings up to 4,000 security tests to bear on each item, and uses Bayesian logic and heuristic filtering—SpammerTrap is a high-performance solution. Its hardened OS was built for speed and security yet is still remarkably easy to set up with its QuickStart wizard and friendly user interface.

SpammerTrap's reasonable pricing includes support agreements, and it's subject to VAR discounts, SECNAP says. There's even a six-month money-back guarantee.



CLIENTS



- dtSearch products have received hundreds of excellent press reviews.
- The dtSearch Web site also has hundreds of developer case studies posted at [www.dtsearch.com](http://www.dtsearch.com).

dtSearch Version 7.6 releases cover both developer products, with new expanded sample code for use with Microsoft's most recent Visual Studio version, and enterprise products, with updates to the user interface.

(800) 483-4637 (800-IT-FINDS )  
[www.dtsearch.com](http://www.dtsearch.com)

## The Smart Choice For Text Retrieval® Gets Better

# dtSearch Version 7.6 Releases Extend 64-Bit Capabilities In Enterprise, Developer Products

dtSearch, a leading supplier of enterprise and developer text retrieval software, has extended its 64-bit product line. The new release covers both dtSearch's enterprise and developer products, including native 64-bit versions. For the developer products, the new release provides expanded sample code for use with Microsoft's most recent Visual Studio version. For the enterprise products, the new release updates the user interface, providing a greater selection of "look and feel" options for users.

The Version 7.6 release includes: **dtSearch Desktop with Spider**, which instantly searches files on a PC, and **dtSearch Network with Spider**, which searches across a network. Both instantly search and display, with highlighted hits, a variety of file types, including email messages along with the full text of email attachments. Through the Spider, both applications can also add Web content to a local or network search.

**dtSearch Web with Spider** quickly publishes a large volume of instantly searchable data to an IIS Internet or intranet site. dtSearch Web works as a point-and-click solution, with no programming required. The Spider provides integrated support for local and remote Web site data.

**dtSearch Publish** lets users easily publish instantly searchable document collections or Web site content to portable media such as CDs, DVDs, and external hard drives.

The dtSearch Engine lets developers add dtSearch functionality to 32-bit and 64-bit applications. The **dtSearch Engine for Win & .NET** supports C++, Java and .NET, including a .NET Spider API. The new release provides expanded sample code for use with Microsoft's most recent Visual Studio version. The **dtSearch Engine for Linux** supports C++ and Java.

The dtSearch product line features: **Terabyte Indexer.** dtSearch products can index more than a terabyte of text in a single index. They can also create and simultaneously search an unlimited number of indexes. Indexed search time is typically less than a second, even across terabytes of data.

**File formats and databases.** dtSearch products include integrated file parsers and

converters for a wide range of popular file types. dtSearch products display existing Web-ready content (HTML, PDF, XSL/XML, etc.) with highlighted hits, and with all images, links, and formatting intact. For other file types, such as MS Office, OpenOffice, and ZIP, built-in proprietary converters render these document types as HTML, with highlighted hits, for display in a Web browser. The dtSearch Engine includes a data source API for indexing SQL-type databases and other non-file data, including BLOB data.

**Spider.** The dtSearch Spider adds local or remote Web site content to a searchable data collection. The Spider supports public sites, intranets, HTTPS, password-accessible sites, and forms-based authentication sites. The Spider supports both static and dynamic Web-based content, including ASP.NET, PHP, MS CMS, and SharePoint, indexing to any level of vertical or horizontal depth. dtSearch products support integrated searches of local and remote content, including WYSIWYG hit highlighted display of Web-ready data.

**Search features.** Full-text and fielded data search options include: distributed or federated search options with integrated hit-highlighted display, fuzziness adjustable from 0 to 10 (to sift through typographical and spelling errors), synonym/concept/thesaurus (through a built-in thesaurus and/or user-defined synonym rings), Boolean (and/or/not), phrase, phonic, wildcard, bilateral proximity, directed proximity, stemming, natural language/vector-space relevancy ranking, variable term weighting, positional scoring, field-based relevancy ranking, data classification and filtering objects, numeric range searching, advanced date recognition, unindexed search (in addition to indexed search), and special forensics search options (text filtering of forensically-recovered data, credit card search, email search, etc.).

**International language support.** Built-in Unicode support covers hundreds of international languages (including right-to-left languages and Chinese/Japanese/Korean character processing options).





PHYSICAL INFRASTRUCTURE



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PHYSICAL INFRASTRUCTURE

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- Alerts for Power & Environmental Conditions
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- NEW!** Linking for Smart CDU (Expansion Modules)

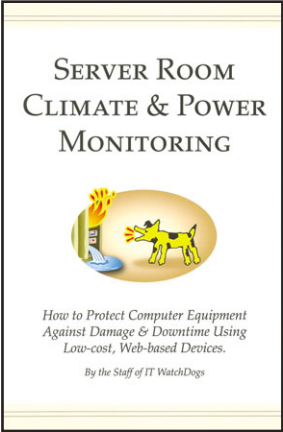


Server Technology, Inc.

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PHYSICAL INFRASTRUCTURE


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PHYSICAL INFRASTRUCTURE



### MicroGoose Climate Monitor

**Low-Cost MicroGoose Climate Monitor with PoE**


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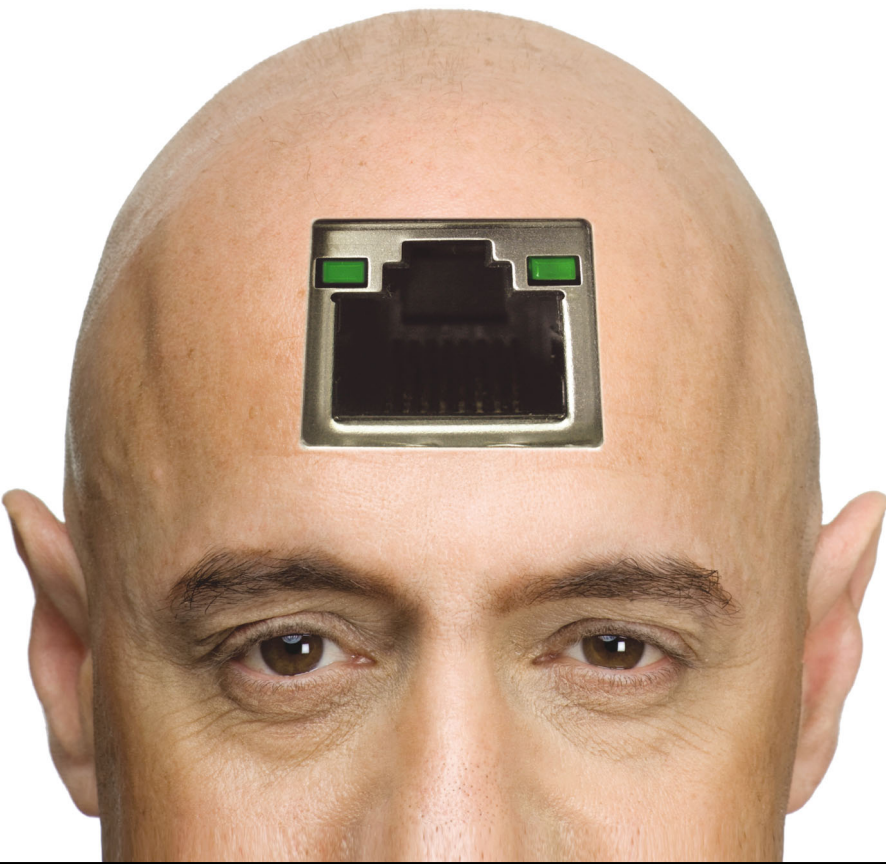




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# PRODUCT RELEASES

## CLIENTS

### ■ Advantech IPPC-4000D

The IPPC-4000D from Advantech is a 4U 19-inch industrial-panel PC ideal for monitoring and surveillance applications. It features a 5.7-inch VGA TFT LCD, 4GB or 8GB of DDR2 memory, and either an Intel Core 2 Duo or Pentium 4 processor. Its connectivity spans a broad range of modern



and legacy interfaces from PCI-E and Gigabit Ethernet on down to ISA, ADD2, RS-232, and parallel port connections. It's capable of running Windows XP and Vista.

### ■ AIS Smart Module Digital Signage Displays

AIS announced the release of Smart Module Digital Signage Displays. The displays are powered by Microsoft Windows Embedded operating system and are designed with rugged steel housings. The displays are available in a 42-inch size, which features an ultra-thin bezel, and can be enhanced with a built-in light sensor, touch-screen, or motion sensor.

### ■ Fujitsu TeamPoS 3600

Fujitsu released details about its TeamPoS 3600 family of custom-configurable point-of-sale systems that expands on the company's TeamPoS 3000 family and is geared toward giving retailers a scalable hardware system. The 3600 family comes in four basic models, all using Intel processors. Models include the TeamPoS 3604, which uses a 2GHz Intel Celeron 440; the 3625 with 2.6GHz Dual Core E5300; 3627 with 2.8GHz Core 2 Duo; and the 3628 with 3GHz Core 2 Duo E8400. Other features include configurable memory, I/O board module, and PCI expansion options; Intel vPro technology; tool-less access; an open architecture platform; and Fujitsu's SmartPoS Manager.

### ■ Liquid Machines Gateway For Microsoft Office SharePoint Server

Liquid Machines upgraded its Gateway for Microsoft Office SharePoint Server software to include support for dynamic, role-based ERM policies with Microsoft Active Directory Rights Management Services. The company says the ERM policies map directly to Microsoft Office SharePoint Server 2007 permission levels for document libraries, enable advanced enforcement options and application-level auditing, and dynamically synchronize policy updates occurring to files outside of Office SharePoint Server 2007. The company adds that Gateway supports business workflows and processes already in place through the extension of persistent data protection for more document and file types (more than 400) and by enabling advanced rights-managed workflows.

### ■ Magic Power Technology MPM-U300 PSU

Magic Power Technology announced the MPM-U300, a 300W medical-grade, open-frame, single-voltage power supply. The MPM-U300 is RoHS-compliant and is designed for convection cooling. In addition to fitting 1U spaces, the MPM-U300 features less than 150 micro amperes under 264VAC at 63Hz for up to 92% efficiency. Design features include the ability for use with direct-contact medical equipment, a terminal block design for input and output options, and an optional cover. The MPM-U300 provides remote voltage sensing, short-circuit and over-voltage

protection, performance from 0 to 50 degrees Celsius without degradation, and IEC/EN 60601-1 3rd edition medical safety regulation compliance.

### ■ MKS Integrity

MKS released MKS Integrity for advanced integration into the Microsoft Visual Studio. MKS uses the Visual Studio Software Development Kit to enable deep integration and enhanced functionality. Developers can decipher developer activity and perform ALM operations. Workflow is streamlined by features such as work-in-progress management for finding assigned tasks and the viewing, editing, or creation of new ones. The solution-sharing wizard lets users search the MKS Integrity server for solutions to import. MKS Integrity integration supports Microsoft Visual Studio 2005 and 2008, except Express.

### ■ Océ PlotWave 300

Océ announced the PlotWave 300 printer, a monochrome multifunction system that makes it simpler and less time-consuming for users to print, copy, and scan low volumes of technical documents. The PlotWave 300 is easy to use, energy-efficient, and can withstand use from multiple users. It also features Océ's Radiant Fusing technology in order to provide the most efficient way to fuse toner to paper. A USB flash drive lets users print and scan documents at the system and features an automated roll-changing system that loads, cuts, and even registers the size of inserted paper.

### ■ Oracle E-Business Suite Release 12.1

Oracle released the latest version of its E-Business Suite, which provides users with product enhancements across human resources, supply chain management, procurement, projects, master data management, customer relationship management, and financials. Oracle E-Business Suite Release 12.1 features integrated analytics from Oracle Business Intelligence Applications, an integrated talent management solution, Oracle Landed Cost Management for financial visibility into extended supply chain costs, Oracle Site Hub, and Oracle Product Information Management for Retail.

### ■ Pervasive Software Integration Hub

Pervasive Software announced the Pervasive Integration Hub, a configurable integration solution that provides organizations with the ability to create and maintain a centrally managed business partner hub. Distributed "intelligent agents" are included, which can be used for the extraction of data from business partner systems, as well as updating and inserting data back into business partner applications. Pervasive Integration Hub eases the work included with integration by delivering remote end-to-end integration directly with a business partner's entire application range. The Pervasive Integration Agent shortens the time and lowers the investment typically necessary to on-ramp, monitor, and manage new customers, suppliers, or partners.

### ■ Talend Open Studio & Talend Integration Suite 3.1

Talend announced version 3.1 of Talend Open Studio and Talend Integration Suite. Version 3.1 offers deep integration into the information system that lets enterprises across various industries streamline the development and deployment of mission-critical data integration processes while simultaneously reducing cost and time-to-market. Talend's updated solutions feature monitoring and scheduling capabilities, enhanced business modeling, and broader connectivity to legacy systems and business applications. Version 3.1 offers

interoperability with the rest of the information system, extending the versatility of the solution and its reach across the enterprise. Also, the localized user interface in version 3.1 comes in several different languages.

### ■ Wyse Technology Enhanced SUSE Linux Enterprise & Windows Embedded CE 6.0 R2

Wyse Technology announced updates to two operating systems used in the company's thin clients, Wyse Enhanced SUSE Linux Enterprise and Windows Embedded CE 6.0 R2 for virtual client and cloud environments. Wyse partnered with Novell to develop the updated Wyse Enhanced SUSE Linux Enterprise, which offers enhanced support for users across the enterprise in order to improve the virtual desktop experience. Wyse's enhanced USB peripheral virtualization support lets customers use "real-time" devices such as Web cams and USB headsets at the desktop level. Windows Embedded CE 6.0 R2 offers an accessible and familiar user experience, updated connectivity components, support for ICA/HDX and RDP clients, and improved security via support for SSL and TLS (Transport Layer Security) protocols.

## MESSAGING & TELEPHONY

### ■ Acme Packet & NICE Systems Joint Offering

Acme Packet and NICE Systems have joined to release a tool that utilizes the SIP (Session Initiation Protocol) standard to leverage Acme Packet's replication capabilities for multiple IP sessions, including voice, video, and instant messaging. The offering uses NICE's session recording and analytics expertise and creates a secure and flexible product designed to meet IP contact center customers' current and future needs. It can also record all communications within a customer interaction session.

### ■ Jatheon Plug N Comply

Jatheon announced the next generation of Plug N Comply, its email archiving appliance, which simplifies managing and complying with e-discovery requirements for small, medium-sized, and large enterprises. Features include an enhanced feature set and user interface; enhanced hardware configuration, including faster processing; RAID configuration across the full product line; and increased storage availability ranging from 700GB to 27TB of virtual storage.

### ■ Oracle Beehive

Oracle unveiled Oracle Beehive, which is a unified collaboration platform that consists of a range of standards-based tools, including email, calendar, team workspaces, conferencing, and instant messaging. Features include Web-based Team Collaboration workspace software and support for wikis, team calendaring, RSS, contextual search, and advanced file sharing. Other features include enhanced Web and voiceconferencing and expanded integration with popular desktop productivity tools. Oracle Beehive can be deployed on-premise or through Oracle On Demand.

### ■ Oracle Communications Unified Inventory Management 7.1

Oracle introduced the latest version of the Oracle Communications Unified Inventory Management platform, which is designed to support enterprise and consumer services across fixed, cable, and mobile networks. Version 7.1 features improved usability and integration, prebuilt technology packs that provide out-of-the-box functionality for accelerated rollout of the most common IP multiplay and higher-layer services, true inventory federation, out-of-the-box integration with Oracle Business Intelligence Enterprise Edition, and an enhanced graphical design time modeling tool.

### ■ Research In Motion BlackBerry Mobile Voice System Server For Cisco Unified Communications Manager

RIM (Research In Motion) launched the BlackBerry Mobile Voice System Server for Cisco Unified Communications Manager, which lets users manage and control corporate voice services on BlackBerry smartphones thanks to the integration enhancements of Cisco Unified Communications Manager versions 6.1 and later. Features include a single corporate phone number for the Cisco Unified IP phone and BlackBerry smartphone, simultaneous or sequential ringing of up to four devices, easy access to Cisco Unified Communications Manager telephony services, the ability to make calls from either the BlackBerry phone number or enterprise line, and the ability to transition an in-session call from a BlackBerry to a Cisco Unified IP phone. BlackBerry MVS Server for Cisco Unified Communications Manager will be available in Q3 of this year.

### ■ Sherpa Mail Attender v4.5

Sherpa released version 4.5 of its Mail Attender content management tool that addresses mailbox, Outlook PST file, and public folder management for Microsoft Exchange users. Latest features include Transfer Rules, which allow the secure transfer of data from one email store to another without needing to connect the two. Mail Attender v4.5 allows users to automate common policies and offers reporting capabilities that provide access to comprehensive statistics on the content of entire email systems.

### ■ TalkSwitch & Covad Integrated Access Combined Phone & Internet Service

TalkSwitch and Covad partnered in the release of a communications solution that uses TalkSwitch and Covad IA (Integrated Access) combined phone and Internet service to deliver equipment and services with the big-business features that small enterprises need while still maintaining ease of use and cost savings. With Covad Integrated Access and Internet service, users benefit from a flexible all-in-one voice and data service. The companies say small business customers can start with as few as four phone lines and grow one line at a time. Also, with TalkSwitch phone systems, customers can take advantage of VoIP benefits, analog and IP phones, auto attendants, voicemail, and complete call control.

## NETWORKING & VPN

### ■ AdRem NetCrunch 5.2

AdRem Software announced an updated version of its NetCrunch product, version 5.2, which can monitor and manage networks up to several thousand nodes. NetCrunch version 5.2 offers support for 64-bit SNMP counters and enables reliable tracking of high-speed interfaces' performance without losing critical data. The new version also monitors ESX server performance and recognizes Windows virtual machines running on VMware ESX, Citrix XenServer, and Microsoft Hyper-V servers.

### ■ AEP Networks AEP SecComm Personal

AEP Networks launched AEP SecComm Personal, a communications platform designed to deliver enhanced grade encryption to remote workforces. SecComm Personal provides remote workforces with the same functionality in the field as one would find in the office without having to compromise data security. AEP SecComm Personal is plug and play, so it is easy to use and connect to the available networks. It also lets customers extend remote access to classified data over a range of network access technologies, including remote



PRODUCT RELEASES

office LAN, broadband (over DSL or cable), 3G, and Wi-Fi.

■ Apparent Networks PathView

Apparent Networks released PathView, which can help enterprises troubleshoot, monitor, assess, and report on network performance, even if the network segments are owned or managed by third parties. PathView enables enterprises to manage end-to-end network performance and ensure their deployments will work properly and deliver operational improvements. PathView is available as a download and starts at \$2,995.

■ Citrix Systems C3 Lab

In response to growing demand from organizations to use virtualization technologies in a more flexible way, Citrix announced Citrix C3 Lab, which is designed to allow companies of all sizes to use AWS (Amazon Web Services) as part of their standard technology infrastructures. One powerful feature is that it will let IT professionals easily prototype future cloud projects. There is no additional charge for running Citrix C3 Lab instances in Amazon EC2; the Amazon EC2 service is priced on demand as a utility, and charges vary.

■ Citrix Systems Dazzle

Citrix Systems announced Citrix Dazzle, a self-service “storefront” for enterprise applications that effectively gives corporate employees 24/7 self-service access to a broad array of applications, desktops, and content, allowing them to choose exactly what they need, when they need it. Citrix Dazzle will act as a storefront for Citrix products such as Citrix Delivery Center, Citrix XenApp, and Citrix XenDesktop. Features include an intuitive user interface and simple access to applications and IT services.

■ Citrix Systems Essentials 5.5

Citrix Systems announced upgrades to Citrix Essentials for XenServer and Hyper-V, which add advanced virtualization management capabilities to both product lines. Citrix Essentials 5.5 is designed to help XenServer and Hyper-V customers achieve more manageable, scalable, and agile data centers by providing open technologies that leverage their existing investments in the most efficient way possible. Features include expanded storage integration, automated stage management, and dynamic workload balancing.

■ Citrix Systems NetScaler VPX

Citrix Systems announced a software-based virtual appliance version of its NetScaler MPX hardware appliance product line, NetScaler VPX. The product is designed to accelerate and secure Web applications for thousands of corporate customers and provide a delivery infrastructure for large consumer Web sites and cloud providers. With the VPX release, NetScaler’s purpose-built equipment and mission-critical Web applications are bundled into an easy, flexible, and low-cost format that can be downloaded from the Web and run on any standard server platform. Other features include lower TCO for public and private cloud infrastructures, integrated on-demand provisioning, global scalability with “cloud balancing” capabilities, flexible and affordable multitenancy, simplicity for SMB and departmental use, and integration with mainstream solutions.

■ Citrix Systems Receiver

Citrix Systems announced Citrix Receiver, a lightweight software client designed to make accessing virtual desktops and applications on any device as easy as turning on your TV. Citrix Receiver is designed to enable IT organizations to deliver desktops and applications as

on-demand services to any device in any location with a rich high-definition experience. It also lets application developers and third-party application vendors ensure their Windows applications can run on any endpoint that has a Receiver installed.

■ F5 Management Pack For Microsoft System Center Operations Manager 2007

F5 Networks launched its F5 Management Pack for Microsoft System Center Operations Manager 2007. The software plugin lets users monitor the performance of network devices, application traffic, and other components of the network infrastructure and can automatically adapt to changing network conditions to keep performance up. Features include F5’s PowerShell-enabled iControl API and the customizable iRules scripting language. The F5 Management Pack is fully interoperable with System Center Virtual Machine Manager, Hyper-V, and other Microsoft offerings.

■ HP Insight Control Suite For Microsoft System Center

HP released its HP Insight Control suite for Microsoft System Center, which is an integrated management environment. The offering enables users to lower infrastructure costs and improve software and network uptime by providing visibility into software and hardware events through the Microsoft System Center consoles. Alerts include server health warnings and prefailure condition alerts. The offering also delivers proactive virtual machine management and enhanced configuration management via Microsoft System Center Configuration Manager 2007. HP ICE-SC includes a full year of 24/7 phone support. The HP Insight Control suite for Microsoft System Center will be available next month starting at \$549.

■ IBM WebSphere CloudBurst Appliance & WebSphere Application Server Hypervisor Edition

IBM announced two products designed to let customers seamlessly extend their investments in SOA into a cloud services environment. The WebSphere CloudBurst Appliance provides access to software virtual images and patterns that can be customized before being securely deployed, managed, and maintained. The WebSphere Application Server Hypervisor Edition is server software optimized to run in virtualized hardware server environments, such as VMware, and comes preloaded in WebSphere CloudBurst.

■ IGEL Technology Virtual Universal Desktop

IGEL Technology announced a virtualized edition of its Universal Desktop Linux-based firmware. The virtual Universal Desktop lets companies evaluate the look and feel of IGEL’s Universal Desktops at no cost. Additionally, the virtual Universal Desktop provides a comprehensive firmware version of IGEL’s advanced pack (without the Ericom PowerTerm Terminal emulation offering) so companies can assess the product on a PC or notebook test system. The virtual Universal Desktop will run VMplayer on top of a Windows or Linux operating system, so organizations can experience the Universal Desktop’s features, including access to several digital services, local software tools, and protocol clients.

■ Juniper Networks SRX Series Services Gateways & EX Series Ethernet Switches

Juniper Networks released additions to the SRX network infrastructure series, which is part of the Juniper Distributed Enterprise Solutions, including NSM (Network and Security Manager) and JUNOS Software. The four additions to the SRX Series family are SRX100, SRX210,

SRX240, and SRX650. All models feature integrated security and routing and switching. Juniper also introduced four Fast Ethernet enterprise access switches: the EX2200-24T-4G and EX2200-48T-4G (10/100/1000 BASE-T ports) and the EX2200-24P-4G and EX2200-48P-4G.

■ nCircle CCM

nCircle released the CCM (Configuration Compliance Manager) auditing solution for VMware virtual infrastructure. CCM is designed to secure virtual machines along with their hypervisors; it finds virtual machines and hypervisors via agentless discovering technology and configuration auditing. nCircle CCM compares audited configurations with configurations the CIS (Center for Internet Security) benchmarks for comprehensive coverage.

Novell

■ Novell PlateSpin Recon 3.6

Novell announced PlateSpin Recon 3.6, a data center workload profiling, analysis, and planning tool that gives users an ongoing view of their physical and virtual infrastructures. PlateSpin’s features include resource reclamation reports that show resource consumption and reclaimable resources, the ability to include virtual clusters in virtual infrastructure reports, support for SUSE Linux Enterprise Server 11 and Solaris Containers, and a licensing model that offers less-expensive ongoing analysis of physical and virtual data infrastructures.

■ ScriptLogic Help Desk Authority 8.1

ScriptLogic launched Help Desk Authority 8.1, which is a help desk software solution designed to track tickets and shorten the life cycle of help desk problems. Features include accelerated incident resolution by integrating hardware and software asset information directly into trouble tickets, enhanced asset inventory collection features, and improvement of ScriptLogic’s Desktop Authority. Additionally, Help Desk Authority 8.1 includes an optional HDAsset module that has been enhanced to collect an inventory of assets from the hardware and software on the Windows network without demanding agents be installed on target devices.



■ SEH ISD400 & ISD410

SEH announced an enterprise print spooling appliance, the ISD400 (\$2,899.99). The 19-inch ISD400, designed for operation in server racks, supports up to 450 users and 150 printers and includes a 160GB hard drive. It can reduce network congestion by offloading and handling high-bandwidth, complex print jobs with speed and security. The appliance is also available in a two-drive (160GB each) RAID edition called the ISD410 (\$3,333.99), which adds data redundancy and high reliability.

■ SolarWinds IP Address Tracker & Orion IP Address Manager

SolarWinds released two products that offer IT cost-effective solutions to IP address management. SolarWinds IP Address Tracker, a free tool, and Orion IPAM (IP Address Manager), an addition to the flagship Orion network management family, grant IT the ability to no longer use spreadsheets and opt for an IP address management solution that is enterprise-class, centralized, and easy to use. With SolarWinds IP Address Tracker, a network engineer can scan an IP address range, build a complete

list of IP addresses, and help ensure they are correctly assigned. Orion IPAM utilizes the intuitive point-and-click interface of the Orion family to achieve easy management of any IP address space.

■ Tethys Solutions Automation Anywhere Server

Tethys Solutions released Automation Anywhere Server software to provide automation, centralization, and collaboration for enterprises. AA Server lets multiple users automate business and IT processes by providing centralized security, user management, collaboration, deployment, and backup. It includes features such as Windows object recorder, email automation, terminal emulation, and SFTP to extend the reach of automation. AA Server also incorporates visualization and collaboration to provide efficiency while still maintaining high-quality enterprise standards. One key feature is the ability to visually create enterprise and IT process workflows; AA Server provides a screen shot of every step of an automated process with its Visualize technology.

PHYSICAL INFRASTRUCTURE

■ Aten KL3116T KVM

Aten announced the all-in-one KL3116T KVM switch with 17-inch retractable touchscreen LCD monitor and keyboard and built-in touchpad. In addition to offering secure access to 16 servers via dual USB or PS/2 interfaces, the KVM takes up just 1U of rack space. Aten says the model requires no additional software to operate, as the touchscreen LCD requires no driver installation and no serial port to operate. The KL3116T can daisy-chain up to 31 additional switches so that 512 servers can be controlled from one touchscreen, keyboard, and mouse console. A KVMP feature, meanwhile, allows administrators to use a USB port below the LCD panel to connect peripherals or do backups and restores, security patches, and CD-ROM diagnostics.

■ Chloride Touchscreen System

Chloride announced a networkable touchscreen system metering display designed specifically for its scalable, multi-module UPS architecture. The touchscreen system features a 12.1-inch TFT color LCD that offers instant access to overall system and module conditions and status, such as system load, metered voltages, phase load balance, breaker status, and module level alerts. Users have three installation options to choose from, including mounting in Chloride-supplied switchboards, in a wall-mounted NEMA 1 enclosure, or in switchboards provided by the user’s vendor.



■ DuCool DuHybrid Air Conditioning System

DuCool launched the DuHybrid air conditioning system powered through solar thermal energy or electricity. The system is aimed at reducing required cooling energy by up to 60% vs. standard air conditioning. The system combines desiccant dehumidification with evaporative or geothermal cooling, which eliminates the need for conventional mechanical cooling. When solar thermal energy is available, the system uses this power source but automatically switches to electric power if required. DuCool says the systems can be integrated with a



# PRODUCT RELEASES

*Continued from Page 17*

cogeneration system, as well as be powered by other renewable energy sources or waste heat. In addition to renewable energy and electric operating modes, the system comes in 1400CFM, 2400CFM, and 3400CFM configurations.

## ■ Rackmount Solutions USystems Network Server Rack

Rackmount Solutions announced it will be the United States’ sole distributor of USys-tems’ Network Server. The server is designed to reduce the noise levels of server room equipment by 28.5dBa. It uses dense acoustic foam bricks and insulation within the sides, doors, top, and bottom of the rack to ensure the rack is sealed and the sound and heat are confined when the doors close. The U-Coustic Active Rack is available in both active and passive models, with the ability to dissipate up to 7.2kW of internal heat, according to a study performed by MIRA.

## ■ Raritan Dominion PX-4000 Series & PX Firmware v1.3.5

Raritan announced a series of PDUs with smart features, the Dominion PX-4000 series, which are high-power rack models that monitor not only blade server power draw but also the temperature of the incoming air. The PDUs have no provision for remote outlet switching, so they cut down on the risk of accidental shutdown. Raritan also released PX firmware v1.3.5 that alerts users to unbalanced three-phase power demands and provides highly accurate kilowatt-hour metering.

### SECURITY

## ■ Absolute Software Computrace For Netbooks

Computrace for Netbooks from Absolute Software (\$24.99 for a one-year license) aims to help organizations find their netbooks in case they’re stolen or lost. The Computrace software Agent installs directly into the firmware of compatible computers, at the factory or by the customer, so it can’t be removed by formatting the main storage drive or reinstalling the operating system. The Computrace Agent regularly contacts the Absolute Monitoring Center with location and IT asset management information, and customers can also log in to the Absolute Customer Center to monitor changes. If stolen, it can “phone home” to Absolute Software, who will then work with local law



enforcement to track and recover the netbook through procedures such as key captures, Registry scanning, file scanning, and geolocation. Computrace for Netbooks supports Windows and Mac OSes.

## ■ Attachmate Reflection For Secure IT Version 7.1

Attachmate released the Attachmate Reflection for Secure IT version 7.1, a family of SSH servers and clients designed for Windows and Unix. Enhanced features include added multiplatform support, authentication compliance, and protection of sensitive information during transit. Specifically, Secure IT 7.1 offers granular access control and activity logging. The FIPS 1402 validated cryptographic module protects data in motion. Version 7.1 also features the Reflection Public Key Infrastructure Services Manager for PKI configuration and functionality.

## ■ Bloxx Tru-View Technology 5.0

Bloxx released the latest version of its Tru-View Technology 5.0 Web-filtering appliance, which includes enhanced protection against secure anonymous proxies, better

real-time monitoring and reporting through a dashboard interface, and the incorporation of Internet Watch Foundation’s database feed for illegal sites. Bloxx says the appliance includes more than 120 different types of Internet activity reports, while quick reports provide nearly instant details for the reprot most frequently accessed by IT managers. The Tru-View Technology uses international patent-pending technology that analyzes and categorizes Web pages faster and more accurately than other Web filters using manual URL classification and keyword scoring alone, the company says.

## ■ e-DMZ Total Privileged Access Management Suite

e-DMZ announced the integrated TPAM (Total Privileged Access Management) Suite. This product is designed to help CISOs tackle the threat posed by privileged users accessing their corporate networks. The TPAM Suite includes shared/privileged password management, A2A password management, privileged session management, and privileged command management. The TPAM suite lets existing PAR (Password Auto Repository) and eGuardPost users have the flexibility to allow all four features on one appliance or to freely couple the technologies over the LAN/WAN based on deployment needs.

## ■ F5 Networks BIG-IP Application Security Manager Version 10

F5 Networks introduced the latest version of its BIG-IP ASM (Application Security Manager) Web application firewall. BIG-IP ASM version 10 is ideally suited to the demands of enterprises and service providers seeking to consolidate their infrastructure and secure, deploy, and optimize applications. Available as a standalone device or as a software module, the BIG-IP ASM features enhanced protection against layer 7 DoS (denial-of-service), cross-site scripting, brute force, and SQL injection attacks. Other features include integration with Splunk and Secerno’s DataWall. The offering also comes with preconfigured policies that enable BIG-IP solutions to optimize and secure popular applications from Microsoft, Oracle, IBM, and more.

## ■ Fortinet FortiCarrier

Fortinet introduced its carrier-grade FortiGate multithreat cloud-based security platform, called FortiCarrier. The offering is designed to assist carriers, service providers, managed security service providers, and enterprises in the protection of networks and networked assets. Fortinet’s FortiCarrier platform offers a variety of carrier-specific features, including securing VoIP infrastructures and mobile operator content and enabling automated provisioning and management of security policies on a per-user basis. Other features include dynamic security profiles, Session Initiation Protocol, security, and mobile provider security. The FortiCarrier family consists of the FortiOS Carrier 4.0, FortiCarrier-3810A platform, and the FortiCarrier-5001A-DW platform.

## ■ HP ProCurve Threat Management Services Module & ProCurve Manager Plus 3.0

HP unveiled the latest additions to its ProCurve ProActive Defense security portfolio, the HP ProCurve Threat Management Services Module, which provides network administrators with a firewall, VPN, and intrusion-prevention toolbox. HP also announced the latest version of its HP ProCurve Manager Plus product suite, which helps users simplify and secure network management and prevent wired and wireless security breaches. ProCurve Manager Plus 3.0 features the ProCurve Mobility Manager 3.0, Network Immunity Manager 2.0, and Identity Driven Manager 3.0 modules.

## ■ Lancope StealthWatch System 5.9

Lancope released StealthWatch System 5.9, which includes a free virtual appliance, StealthWatch FlowSensor VE. StealthWatch System 5.9 seamlessly integrates and manages cross-platform infrastructures from one interface to provide comprehensive network security. This release is designed to optimize enterprise deployment on both physical and virtual networks. StealthWatch FlowSensor VE uses NetFlow to monitor traffic; it’s scalable with low I/O and CPU impact. StealthWatch performs Qualys vulnerability scans, which detect abnormal network characteristics. StealthWatch FlowSensor VE connects to the physical StealthWatch System, starting at \$1,500. StealthWatch System 5.9 starts at \$49,995.

## ■ Optenet Solutions For Telco

Optenet launched OST (Optenet Solutions for Telco), a multitenant threat management solution that enables ISPs to deliver a full suite of high-performance security services from a single platform. OST is designed to protect the operations, desktops, and mobile devices of millions of subscribers and includes a suite of services with Web and mail filtering, WAP and MMS filtering for mobile operators, antivirus and malware detection engines, firewall, IDS/IPS, Web acceleration, and unified policy management. The multitenant architecture delivers a scalable “many-to-many” model.

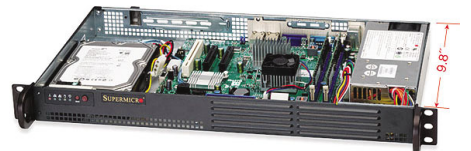
## ■ RSA Key Manager Suite

RSA added enhancements to its RKM (RSA Key Manager) suite for the application, database, and storage layers. RKM 2.5 offers operational, cross-platform management via data center encryption solutions, including the scalable Brocade 32-port standalone encryption switch and the Brocade 16-port encryption blade for the DCX family. Sun StorageTek LTO-4 tape drives are also integrated into RKM. Other features include multiple key management silos, centralized key control, and data tokenization services. RKM integrates with EMC PowerPath path management software, EMC Connectrix SAN switches, Cisco MDS switches, the Advanced Security option for Oracle Database 11g Enterprise Edition, and Quantum and IBM LTO-4 tape drives.

### SERVERS

## ■ Supermicro Server Building Block Solutions

Supermicro released Server Building Block Solutions, 4W and 8W Intel Atom servers and platforms for embedded industrial PC applications. The X7SLA-L platform uses the 4W Atom 230 processor and features seven USB 2.0 headers, 2GB of DDR2 memory, Intel GMA 950 graphics, a Gigabit Ethernet port, and four SATA ports with RAID 0/1/5/10. The 8W X7SLA-H platform steps up to a dual-core Atom 330 with a second Gigabit Ethernet port and an extra Type A USB 2.0 connector and internal serial port. On the server side, the compact and fanless 5015A SuperServer is only 9.8 inches deep and includes two internal hard drives. Finally,



the SuperServer 5035A is a minitower with three add-on cards and four hot-swappable hard drive bays, and it is 80 Plus Bronze-certified for achieving 85%+ power efficiency.

### STORAGE

## ■ AppAssure Replay ApplImage SQL Pack

AppAssure released the Replay AppImage SQL Pack. Designed to deliver backup

speeds four times faster than native SQL backups with compression, AppAssure’s SQL Pack also provides optimal storage resources by cutting back on the overall storage footprint by more than 90%. The Replay AppImage SQL Pack is engineered to deliver comprehensive backup and disaster recovery for SQL Servers, including system and user databases, SQL binaries, and the server. It features off-host processing, and Replay AppImage gets rid of backup overhead and produces constant application protection for SQL Server environments, along with access to point-in-time databases for simplified recovery.

## ■ Arkeia Network Backup v8 & FalconStor VTL Backup Software

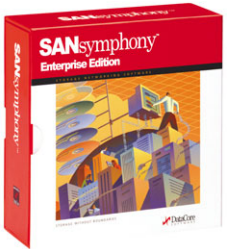
Arkeia Software teamed with FalconStor Software to combine the storage services of the Arkeia Network Backup v8 backup software and the FalconStor VTL. Arkeia Network Backup can deploy as a physical appliance, in a virtual machine, or as application software. It can back up 130 platforms and store files for third-party VTLs that support iSCSI, SAS, SCSI, or Fibre Channel. FalconStor FDS enables users to cut down on some storage requirements by improving overall performance.

## ■ Axxana Phoenix System

Axxana announced details of its Phoenix System, an EDR (enterprise data recording) system that enables 100% disaster recovery without data loss over any geographical distance while offering companies significant costs savings vs. traditional disaster recovery approaches. The company is testing the Phoenix System within several organizations and plans to deploy it to major enterprises soon, as well as working with EMC to evaluate Phoenix System within EMC environments. Axxana it is offering an approach to data removal through the protection of data “through the disaster,” thus ensuring the full survival of all source data within an enterprise site.

## ■ DataCore Software SANmelody 3.0 & SANsymphony 7.0

DataCore Software released updated versions of its SANmelody and SANsymphony storage virtualization applications to provide SAN-wide performance enhancements and disk utilization for virtual server and virtual infrastructure users. Features include x64 program versions; a Transporter tool that enables conversion between various physical and virtual servers; waste-free space reclamation ability for thin provisioning; and support for native, 64-bit “mega caches” to deliver fast storage performance and use with Database, Exchange, and other I/O applications. The Transporter tool, meanwhile, allows for time-saving migration of disk images and workloads between various OSes, hypervisors, and storage subsystems.



## ■ Dynamic Solutions International TapeManager 8

Dynamic Solutions International announced TapeManager 8, an application that simplifies operations and provides enhanced flexibility and data protection. Features include a future-proof design and the ability to integrate with virtual tape libraries, automated library systems, and standalone tape drives. TapeManager 8 is designed to be scalable to fit any capacity requirements and includes an improved graphical user interface, policy management enhancements, multihost enhancements, and increased reporting capabilities.



PRODUCT RELEASES

■ Enigma Data Solutions Project Archive & Retrieval System

Enigma Data Solutions added new features to its PARS (Project Archive and Retrieval System) suite that automates the backup of diverse application data from geotechnical, reservoir characterization, and office applications. With PARS Backup, customers can efficiently restore multidisciplinary E&P projects in the event of data loss, system failure, or natural disasters. PARS is able to identify and capture critical project information and metadata from mainstream E&P applications, such as LandMark, Schlumberger and Paradigm, and several other products used for reservoir characterization.

■ i365 EVault Plug-n-Protect

i365, a Seagate company, announced the EVault Plug-n-Protect backup and recovery appliance. The all-in-one appliance is based on a Nexsan SATA storage system, and it is intended to offer enterprise features in a package for SMEs and remote and branch offices within large enterprises. It comes with software such as EVault Real Time Protection and EVault System Restore. In addition, EVault Plug-n-Protect can be installed quickly, and the appliance features a year or more of hardware and software support, delta processing and backend deduplication, and up-to-the-minute protection of mission-critical systems.

■ LaCie Big Disk Network & d2 Network

LaCie released the Big Disk Network and d2 Network, two NAS models the company says are optimized to let users immediately store, share, and back up files from any PC or Mac via wired or wireless connections. The d2, which includes an eSATA

connection option, supports up to 1.5TB of storage. The Big Disk Network supports up to 4TB using two drives in a RAID 0 setting. Both options are geared toward small and medium-sized offices looking to develop working environments of up to 50 users (15 at a time). The models bundle LaCie Network Assistant software, Genie Backup Manager Pro for Windows, and Intego Backup Manager Pro for Macs. The models both have aluminum cases, a heatsink design that uses natural heat dissipation by providing 60% more surface area, and horizontal or vertical positioning choices. The d2 Network starts at \$189.99, and the Big Disk Network starts at \$379.99.

■ PHD Virtual esXpress v3.5

PHD Virtual announced version 3.5 of its esXpress data protection and recovery solution for virtual machines. This version includes enhanced functionality for enterprise management, a multiuser global deployment and configuration application, and block- and file-level backup. Other features include built-in incremental replication, which replicates newly changed blocks and injects them directly into the replicated virtual machine, and multiuser file-level restore for instant access to compressed data. Pricing starts at \$1,000 per host for four concurrent backup streams.

■ PowerFile Hybrid Storage Appliance

PowerFile introduced the Hybrid Storage Appliance, an enterprise-class device designed to deliver the performance of disk, the savings of tape, and dependability



and data integrity in a purpose-built platform engineered for storing fixed content for long periods of time. It uses distributed-performance architecture with petabyte-class scalability and virtualization of the underlying storage technologies. The Hybrid Storage Appliance mixes intelligent storage management software and advanced file management with cost-effective hardware so the HSA lowers both capital expenditure and operating expenditure.

■ SanDisk Cruzer Enterprise & Central Management & Control 3.0

SanDisk announced that its Cruzer Enterprise models have been updated with FIPS (Federal Information Processing Standard) 140-2 Level 2 certification. They offer corporate and government IT depart-



ments a solution for managing their secure hardware ecosystem. The Cruzer Enterprise secure USB flash drives are available in two versions, the standard Cruzer Enterprise and Cruzer Enterprise with McAfee Malware Protection. SanDisk also released CMC (Central Management and Control) version 3.0, which provides IT with more of the tools necessary for the distribution, protection, and recovery of critical data.

■ Sans Digital MobileSTOR MS1CT

The MobileSTOR MS1CT from Sans Digital is a portable one-bay storage unit. The MS1CT includes a removable hard drive tray unit that offers compatibility with Sans Digital's MobileSTOR, MobileRAID, and MobileNAS storage systems. Its heat-sapping



aluminum design allows it to be fanless and silent, and it comes with four interfaces for immediate connectivity to any PC or Mac system: eSATA, USB 2.0, FireWire 400, and FireWire 800.

■ Symantec Managed Backup Services

Symantec announced Symantec Managed Backup Services, which provide management of backup and recovery operations and are designed to allow customers to more effectively utilize IT resources and focus on core business priorities. Features include Managed Problem Escalation for proactive problem management and escalation; improved backup and recovery performance; improved audit and regulatory compliance to ensure critical business data is under strict service control and customers maintain audit and regulatory compliance; strategic use of IT resources; and cost control, which is designed to help customers optimize existing and future hardware and facilities expenditures.


■ Winchester FlashDisk FC-3400 Series


Winchester announced a RAID 6 storage system that can scale up to 215TB. The FlashDisk FC-3400 (starting at under \$25,000) is a tiered RAID array that supports Fibre Channel and SATA drives with single- or double-redundant failover controllers. The 16-drive base unit can be augmented with up to 13 expansion shelves. Winchester claims speeds of 1,500MBps of sustained throughput and more than 120,000IOps with high-speed drives.

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FEATURED PRODUCT

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ScaleMP vSMP Foundation 2.0

ScaleMP Lets You Construct One Virtual SMP From Multiple Off-The-Shelf x86 Servers

by Blaine Flamig

• • •

AGGREGATE. Scale. Simplify. Save. That's the concept behind ScaleMP's patent-pending vSMP Foundation software, which aggregates multiple x86 servers into one high-performance computing virtual SMP (symmetrical multiprocessor) system.

With the new vSMP Foundation 2.0, ScaleMP added support for the new Intel Nehalem processors and Emulex LightPulse Fibre Channel HBAs, enhanced partitioning abilities, extended remote-management capabilities, and improved profiling abilities across the entire system.

Unlike a traditional server-virtualization approach in which one physical server appears to operate as multiple logical servers, vSMP Foundation combines multiple off-the-shelf x86 system boards and chipsets into one larger, industry-standard SMP system. Using this approach, vSMP Foundation exceeds a traditional SMP's performance at far less cost while simplifying the implementation of clusters, in terms of installation and on-going management costs.

vSMP Foundation 2.0's support for Intel Nehalem CPUs lets users aggregate up to 16 x86 Nehalem systems into one shared system supporting up to 32 processors (128 cores) and 4TB RAM.

vSMP Foundation 2.0's new partitioning capabilities let users partition an aggregated virtual system into eight smaller, concurrent partitions, with each able to run its own OS. Emulex LightPulse support provides additional SAN-based data center connectivity options. Support for redundant InfiniBand switches in active-active configurations allows for automatic failover on link errors or switch failures, all while maintaining load balancing between redundant switches for better overall performance. ⓘ

vSMP Foundation

Virtual Machine

App

OS

Hyper-V or VMX

Hyper-V or VMX

Hyper-V or VMX

Hyper-V or VMX

ScaleMP

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## IBM Fellow Predicts Moore’s Law Is Reaching Its End

In early April, speaking at the 2009 International Symposium On Physical Design, IBM Fellow Carl Anderson of IBM’s Systems & Technology Group likened the semiconductor industry to the railroad, aviation, and automotive industries, all of which experienced exponential growth before reaching a point when that growth ran dry. “There was exponential growth in the railroad industry in the 1800s; there was exponential growth in the automobile industry in the 1930s and 1940s; and there was exponential growth in the performance of aircraft until [test pilots reached] the speed of sound. But eventually, exponential growth always comes to an end,” *EE Times* quoted Anderson as stating.

Subsequently, Anderson’s logic would mean the pending end of Moore’s Law, which Intel co-founder Gordon Moore famously brought forth in the 1960s, predicting that the size of chips would halve about every 18 months while speeds doubled. To date, Moore’s prediction has held mostly true. Anderson, however, believes that although the semiconductor industry is apt to see continued exponential

growth, it will only occur for another generation or two of processors and likely include only such cutting-edge semiconductors as multi-core processors. Additionally, designers are finding that current physical processor designs aren’t necessary to execute common applications, Anderson says, and only a select few manufacturers can foot the considerable bills associated with research and design of next-gen processors, as well as building and operating modern fabs.

### Looking Ahead

Anderson predicts that optical interconnect, 3D chip, and accelerator processor technologies are still on track for exponential growth, with rack-to-rack optical interconnects to become commonplace and chip-to-chip interconnects upcoming but on-chip optical signaling still years off. Dr. Robert Castellano, president of The Information Network, a semiconductor research and consulting company, says the “main solution is to go to 3D.”

“I liken the technology to the airline industry,” Castellano says. “People wanted to go faster, so they made the Concorde. But flying it was a loss-maker for the airlines. Now, they are moving more people at slower speeds and not losing as much. Instead of improving on the Concorde, which holds 100 people, the airlines’ mindsets are set at moving more people, hence the double-decker Airbus A-380. IC [integrated circuits] manufacturers are rethinking that now as processing issues such as TSV [through silicon via] are getting all the attention and will be moving soon to 3D at a much relaxed nodal point, perhaps 45nm.”

In related news that would conflict with Anderson’s prediction, DARPA recently awarded Ali Hajimiri, a California Institute of Technology electrical engineer professor, \$6 million over four years to research a “self-healing” circuit technology. Such a circuit would reportedly involve circumventing defective transistors; currently, when even one transistor in a circuit fails, the entire circuit fails.

by Blaine Flamig

## FEATURED PRODUCT

# Powerful Management

## Server Technology’s Sentry Power Manager Gives IT A Centralized View Of Distributed Power Networks

by Sue Hildreth

**MANAGING YOUR** data center’s energy usage is important for reducing costs and ensuring good performance. But keeping track of IT power consumption and maximizing energy efficiency is much more difficult when your IT infrastructure is dispersed across multiple remote locations.

That’s when centralized power management software becomes useful. From a single interface, an IT manager can view power, environmental, and alarm conditions of all the power distribution units on the network. Without centralized power management, checking on the health of the PDUs would require going unit by unit across the net-

becoming aware that these high-power-demand racks require some troubleshooting to determine how much of a power draw will result as they expand.”

### Automation & Security

Sentry Power Manager provides features aimed at making it easier for remote IT managers to manage several locations at once. The system provides a “global view” to allow managers to see at a glance the entire network of devices and also offers multiple views for different concerns, such as current load, temperature, humidity, and capacity.

It has an Auto Discover feature that can scan the network and identity of all of the CDUs (cabinet power distribution units) on



work—not a fun prospect in an organization with more than a handful of PDUs.

“Each PDU has its own Web server, so you’d have to ping the IP address of each one,” says Calvin Nicholson, director of product marketing for Server Technology (800/835-1515; [www.servertech.com](http://www.servertech.com)). “At some point, it becomes difficult to manage that way.”

Server Technology recently released its centralized power management product, the Sentry Power Manager, which can monitor, manage, and control multiple Sentry devices in an IP network. The Sentry Power Manager can be used in conjunction with an integrated building management system or by itself to monitor PDUs on the network and create reports on power consumption trends.

According to Michael Petrino, vice president of PTS Data Center solutions ([www.ptsdcs.com](http://www.ptsdcs.com)), centralized power management software has become increasingly popular as rack density, power usage, and energy costs have all risen.

“For every new build or re-rack and stack, we see high demand for centralized monitoring,” says Petrino. “People are

a specific IP address range. It then downloads the information about the CDUs to the Power Manager, which saves the IT department from needing to locate each CDU on the network and input its data.

Often, security concerns dictate that employees should have access only to those things they need to do their jobs. The Sentry Power Manager includes the ability to separate the viewing and administration of PDUs based on the location or job responsibilities of the employee and lets IT admins create layers of access so IT teams will see only the parts of the network they need to see.

“You don’t want people touching devices that aren’t theirs. There’s always the fear on switched units that someone will turn off something that isn’t theirs,” Nicholson says. “There are different levels that you can set, from administrative all the way to view-only. They can configure the different access permissions that people have, what devices they can access, what units they have, and so on.”

### Managing To Optimize Performance

To help IT administrators determine where inefficiencies in power usage are

## CONTACT

**Server Technology**  
**Sentry Power Manager**  
(800) 835-1515  
[www.servertech.com](http://www.servertech.com)

**Description:** The Sentry Power Manager allows for a global view of thousands of Sentry power distribution units based on temperature, humidity, current, and device status and is capable of reporting power information per kilowatt and kilowatt per hour. It also provides trend reports based on temperature, humidity, in-feed load, in-feed power, watts/unit area, and system total power.

**Interesting Fact:** IT equipment power information from the Sentry Power Manager can be used to gauge data center efficiency for PUE and DCiE, which are power efficiency ratings from the Green Grid.

within their infrastructures, the Sentry Power Manager has trend reports that will display information over time. These reports let IT investigate where there are anomalies in power consumption, such as excess consumption for no good reason or little consumption indicating that perhaps a device should be turned off altogether. Factors such as the humidity of the data center or the time of day are variables that could impact usage, and by examining consumption at a very granular level, data center administrators can uncover ways to save money without cutting corners; in many cases, it might improve performance by freeing up power for more important applications.

“There are a number of things you can do,” Nicholson says. “[For example,] we have customers that operate by the 10% rule, in which roughly 10% of the devices aren’t doing any useful work. If devices aren’t being used or [are] not being used at a certain time of day, then you can turn them off. So you can look at things from a capacity planning perspective to understand where you have the capability to install new devices, or you can use the [trend reports] to bill back services to internal customers.”

“Large or medium-sized businesses can benefit from the technology,” says PTS’ Petrino. “The insight will offer opportunities to combine racks of equipment to make



a more efficient use of space, cooling, installed power, and density.”

The Power Manager’s ability to provide granular readings on energy usage—kilowatts per hour for a device or for a cluster of devices, for instance—makes it possible to determine efficiency metrics such as PUE (power usage effectiveness) and DCiE (data center infrastructure efficiency). PDU and DCiE are metrics that were introduced last year by The Green Grid ([www.thegreengrid.org](http://www.thegreengrid.org)), an industry association concerned with improving the energy efficiency of data centers. These metrics are aimed at helping admins separate their facility power consumption from their IT power consumption.

More companies are interested in efforts such as The Green Grid, given the high cost of energy and constant demand for more power in the data center.

“There’s a huge amount of interest [in Green Grid metrics],” says Nicholson. “Some customers are being told they can’t get additional power. If you want to determine your efficiency to see if more power is available for the IT load, you need to know what your PUE or DCiE is.” ■



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CASE STUDY

# School Locks In Savings

## Marian College Achieves Higher Operating Efficiency With VMware & BlueLock

by Sue Hildreth  
• • •

VIRTUALIZATION IS OFTEN THOUGHT OF as a technology best suited for big companies, with large IT staffs and money to invest in new projects, and not as a strategy that small firms should follow. After all, moving to a virtual environment involves investing in virtualization software, changing or consolidating servers, and migrating data and applications to the new infrastructure.

Yet virtualization can help smaller organizations save on hardware and administrative costs. While moving to a virtual environment can be both expensive and time-consuming up front, it is also often a move that can save the company in the long run.

### Take Advantage Of Virtualization

Marian College, a liberal arts school of 2,100 students based in Indianapolis, is among those organizations starting to take advantage of virtualization technology, and it's saving time and money doing it.

The college's path to virtualization started three years ago with the decision to figure out a way to expand the storage available to application and file servers, according to Michael Temaat, network engineer for the school. At the same time, he wanted to find a better solution to the college's disaster-recovery plan, which then consisted of disk-to-disk local backup and a tape copy that was stored

offsite in a local bank deposit box. It was time-consuming and not terribly reliable.

Also, he notes, "We'd gotten to the point where the data store was too large to work anymore. We were cobbling together several different storage solutions to keep the disk-to-disk part of it, and we'd had to scale back the tape backup to just the yearly financials."

With production storage just about maxed out, he looked at direct-attached storage vendors first and came across BlueLock (www.bluelock.com), a managed services provider and a VMware Service Provider partner. BlueLock's blade computing approach was appealing, says Temaat, and he was also interested in the company's virtualization offerings.

"VMware was out of our price range, and we knew that virtualization was something we eventually would want to move to," says Temaat.

BlueLock bridged the gap to virtualization by providing Marian College with the virtualization technology it needed, along with the services and preconfigured hardware to support that virtualized environment. BlueLock sells its full-service virtual cloud computing environments on a monthly subscription to organizations seeking to take advantage of a virtualized infrastructure but avoid the upfront costs and time required to set it up.

Marian College purchased a package from BlueLock that consists of a blade server

equipped with VMware, iSCSI SAN software, and a remote data replication service that backs up data onto the BlueLock network for disaster recovery. The server—dubbed the BlueLock Box—is physically located at Marian College and serves as the hub of an internal cloud computing environment. The BlueLock network provides added security by replicating the college's data,



thus being able to provide both disaster recovery and business continuity should Marian's server go down.

### Consolidated Servers

Marian College has since moved its storage to the virtual SAN and also migrated its Windows Server 2008, Microsoft SQL Server, and Exchange Server data to its internal virtual environment. By doing that, it has been able to consolidate its 15 existing servers, all of different ages and models, down to the one blade chassis, which is currently equipped with three blades but has the capacity to hold another five as the college's storage needs grow.

The combination of a managed service and a virtual infrastructure has cut down on the administrative time and headaches involved in IT operations. For instance, when the

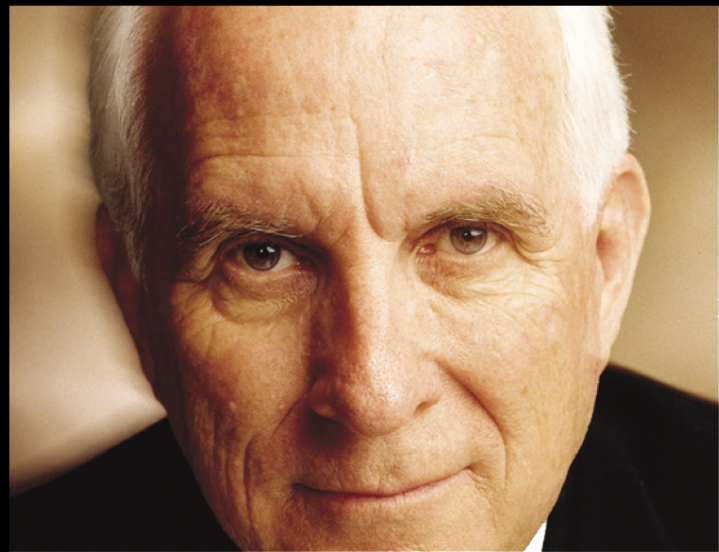
school administration purchased 14 new multifunction printers and planned to offer metered printing services to the students, the virtualization capabilities made it possible for the IT staff to quickly set up a printer network. Creating a virtual print server is a lot faster (and cheaper) than purchasing and installing a whole new hardware-based server. "Normally, setting this up would have taken us three to four weeks to buy the servers [and] get them delivered, deployed, and connected to the printers," Temaat says.

The college also runs clustered servers, which not only optimize the available processing power but also save Temaat from having to schedule maintenance tasks at night. "If I had a firmware update that I needed to apply to the storage hardware, I'd normally have to do that at 11 at night to avoid disruption to users. But with our new infrastructure and the extra availability in the system, I can do it at 2 in the afternoon," Temaat says. "I can restart a server or take down an entire shelf of storage, and the end users don't know it happened."

Standardizing on a hardware and software platform, with one provider to call when problems arise, makes support issues easier to resolve. "We have one blade server model [with] everything from firmware updates to patches to support. So when we have a problem, we call one number to get it taken care of. That's one of the good things about getting an integrated package," says Temaat.

### Hardware Savings

Virtualization is also saving Marian College on the cost of hardware. The combination of a blade server, with room to add blades as needed, and virtualization, which lets the college create new server environments on demand, means the college can



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meet new demands for a server environment without having to upgrade or add hardware servers to meet those needs. That saves the college money by allowing it to retire existing servers as the leases come up for renewal.

“We have a lot of servers that are going off lease. Over the next 18 months, pretty much every server that we have will be going off lease. Now, instead of having to replace them, we just migrate data into the cloud. Over the course of the next 12 to 18 months, there are several servers that we won’t have to replace that we would have had to,” Temaats says, estimating that Marian College will save up to \$20,000 on hardware over the next year and a half.

One of Temaats’s early goals, along with expanding storage, was to enable the college to have offsite replication for disaster recovery. However, until the BlueLock service came to Temaats’s attention, he had intended to put off purchasing a full disaster-recovery service until the college had the IT budget to afford it. However, the BlueLock DR service was priced at less than 50% of what he would have had to pay elsewhere, making it much more affordable, says Temaats.

As part of the agreement with BlueLock, Marian College pays to reserve space on BlueLock’s external cloud. That added space will be used for data replication within the next two or three months, when Marian College moves to a high-speed Internet connection it will get by joining a college consortium. That will give Temaats the disaster recovery capabilities he’s wanted and will also serve as a place where he could relocate production applications in the event of a major campus disaster.

Marian College’s virtualization strategy will also give it room to grow and the

flexibility to change the configuration of servers and networks without having to upgrade or replace hardware.

Getting to a fully virtual environment is a time-consuming endeavor even with the help of a company such as BlueLock. First, Temaats says, “there’s going to be a learning curve. Second, you’re not going to bring it in on a Monday and have it ready on Friday. It’s going to take time even if you have a well-trained and qualified staff doing it.”

But the long-term result from going virtual will be less work required to maintain hardware and more options for adding or expanding servers. It will give the school room to grow and change the IT environment depending on the requirements of the users. “It gives an organization a lot more flexibility to really match the technology to the needs of their community,” Temaats says.

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“We have a lot of servers that are going off lease. Over the next 18 months, pretty much every server that we have will be going off lease. Now, instead of having to replace them, we just migrate data into the cloud,” says Michael Temaats, network engineer for Marian College.

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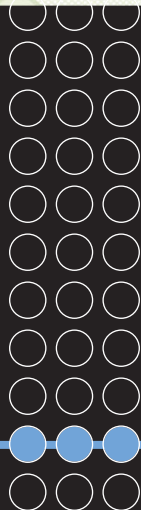
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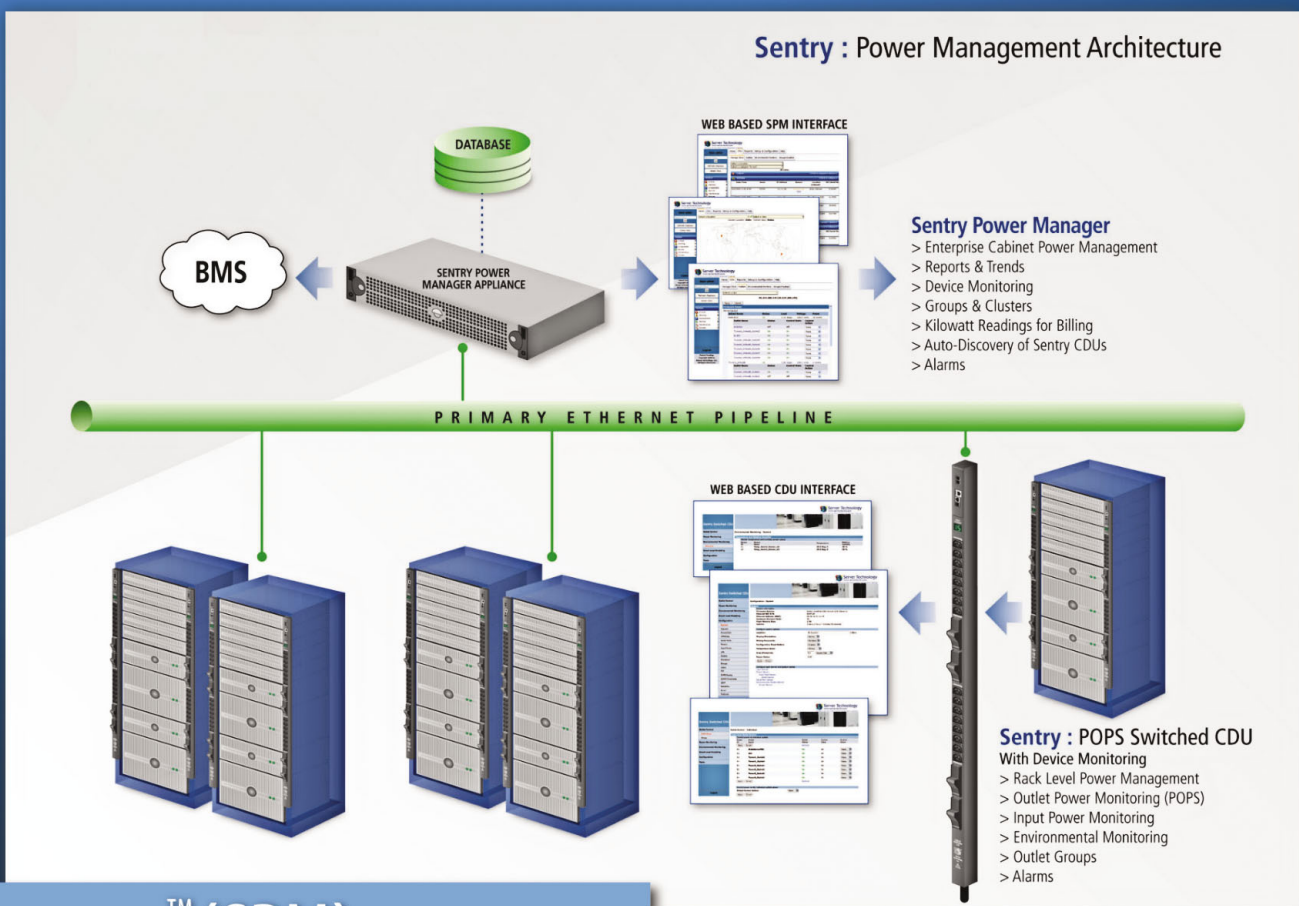
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Solutions To  
Common Data Center Problems

We talked with industry insiders to come up with lists of the top data center problems in four key areas, along with tips to solve them.

Wiggle Room | 24

■ Maximizing existing space is critical to maintaining data center effectiveness, but it isn't always a straightforward process given the mission-critical nature of these facilities.

Easing Virtualization  
Headaches | 25

■ Companies are shifting from seeing virtual infrastructure as a miraculous island of cost savings toward using virtual infrastructure as an integral part of the data center architecture.

Staffing Solutions | 26

■ In this environment, companies looking to staff the very best people in their data centers face some significant challenges.

Email Backup & Management  
Issues | 27

■ Regardless of an organization's size or type of business, one facet of the data center carries an equally critical importance—email.

# Wiggle Room

## Data Centers Can Fight The Space Constraints That Come With Growth

by Carmi Levy

**DATA CENTERS ARE** constantly challenged to make the most out of the space they have. As business needs change over time, rigidly laid out facilities don't always keep pace. Maximizing existing space is critical to maintaining data center effectiveness, but it isn't always a straightforward process given the mission-critical nature of these facilities. Here is a look at some of the areas most in need of improvement.

### Inefficient Floor Layout

A jumble of half-filled racks is often a warning sign of deeper problems in a data center. It wastes floor space, drives inconsistent power delivery, and causes disruptions in airflow that can drive cooling costs up. When configuring racks, follow these best practices:

**Load equipment from the bottom.** Installing hardware only at the top of a rack encourages cool air to pool along the floor and increases the potential for hot spots higher up.

**Fill one rack before starting another.** More disciplined rack deployment reduces floor space needs and allows more effective power delivery.

**Cover up unused rack spaces.** Open slots encourage uncontrolled mixing of hot and cold air. Use vendor-provided cover plates to encourage efficient airflow.

**Remove obsolete equipment.** Older server, storage, and networking equipment takes up more space, requires more power for a given amount of computing power, consumes more cooling resources, and has a higher failure rate than newer hardware. Ruthlessly cull this equipment as part of ongoing consolidation and virtualization efforts.

Simple changes such as reclaiming lost space and reducing growth pressure can extend the life of an existing data center facility.

### Improper Power Planning

Power planning is often an afterthought, with data center managers simply plugging equipment into the nearest outlet. This works either until IT runs out of available outlets or imbalances in power draw result in inefficient and sometimes dangerous shifts in power loads.

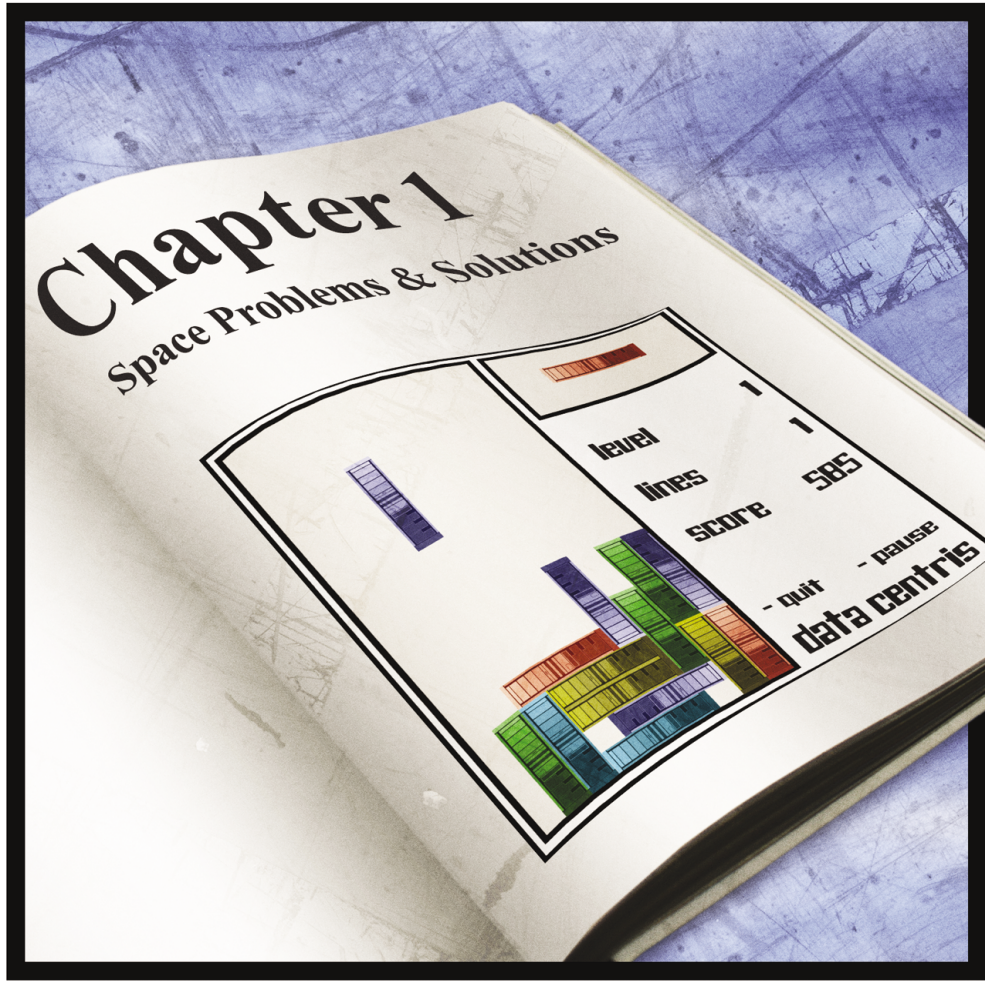
"Usually when you push the edge like this, you end up with cooling problems, as

Research. "Or you still need to add more equipment, but you don't have the power infrastructure to accommodate it."

The answer, Staten says, is to "track power and cooling consumption along with your IT equipment forecast and plan for facilities accommodation when you are planning to purchase new IT equipment."

### Inadequate Cooling

Power and cooling are closely linked. Poorly planned HVAC implementation results in overcooled, badly laid out spaces that waste power and drive up energy costs. They also take up more space than they



you may not have enough cooling for as much equipment as you've installed, and now you have hot spots," says James Staten, principal analyst at Forrester

should, as there is a close correlation between efficiently cooled data centers and those that make intelligent use of space.

This impacts more than just square footage. Skyrocketing rack densities can stress cooling systems beyond their original design limits. Wally Phelps, product marketing manager and airflow evangelist for AdaptivCool ([www.adaptivcool.com](http://www.adaptivcool.com)), says traditional per-rack loads of between 1 and 3 kilowatts have virtually doubled in recent years and continue to increase.

"Data centers built more than three or four years ago were never designed for this type of load," says Phelps. "So they may have enough total cooling capacity, but they can't get it distributed properly," which results in reduced cooling efficiency and greater risk of hot spots.

To combat the problem, match cooling capacity to power requirements and optimize

### Key Points

- Multiplying equipment can be reined in by consolidating existing servers, storage units, and related infrastructure and accelerating virtualization efforts.
- Insufficient power availability because of rapid growth can be addressed by planning power needs well in advance and ensuring drops are available to support evolving equipment requirements.
- Reactive equipment installation can be avoided by partnering with business areas to better match business needs to data center solutions.

your layout to minimize hot/cold-air mixing and to maximize airflow.

"When we go into a data center, we typically identify a certain power load and can then quickly calculate the amount of cooling load required to cool that power load," says Adam Fairbanks, vice president of data center services for Bluestone Energy Services ([www.bluestoneenergy.com](http://www.bluestoneenergy.com)). "Often, the actual amount of cooling will be three or four times the required amount."

Fairbanks says IT can realize significant savings by minimizing the mixing of airflow. This includes mounting air-conditioning units perpendicular to the racked equipment to allow air to blow unimpeded down the aisles, using blanking panels and kick plates, and closing off holes in floor-cooled facilities.

He also recommends updating the cooling plan whenever equipment is added, removed, or moved.

### Business Misalignment

A key challenge to data center space efficiency has little to do with the actual facility. Rather, it lies in the tendency for some IT shops to run their facilities in isolation. This can lead to disconnects between the data center, the services it provides, and the business areas that consume its resources.

"Often, it's hard to tell who the stakeholders are," says Michelle Warren, president of Toronto-based MW Research & Consulting. "Is it IT, the business areas, or both? How many groups are involved? What are their needs? Do they all have an understanding of what the data center means to the organization?"

It is this invisibility of the data center outside of IT that often leads to resources being diverted elsewhere. "IT has to take off their blinders and work with all stakeholders to help them see how the data center delivers value," says Warren. "IT must talk to various departments to get a better sense of what servers, storage, software, and other infrastructure should be implemented to directly meet their needs."

IT must also help business areas understand the data center's TCO, as well as ROI associated with all investments in data center technologies and processes. This level of partnership ensures IT is better positioned to optimize infrastructure layout within the data center over time and avoid reactively installing things as the business dictates. ■

## Top Problem: Too Much Equipment

"The notion of having a physical server box for each application is not always very efficient, given that many boxes only run at 20 to 40% of capacity," says Jack Gold, president and principal analyst of J.Gold Associates. "Virtualization could allow higher server utilization rates, but it also means that the servers need to be tuned to that mode with enough memory, I/O, etc."

Therefore, SMEs should go virtual to match capabilities more closely to business needs

and ensure optimal deployment of scarce resources. Gold says this may be as simple as reallocating existing servers or acquiring new ones.

"This is also related to the green issue, as more utilization of servers means fewer servers, which means less power required," adds Gold. "Data centers have huge power bills associated with them. Reducing power requirements with newer machines can often provide a very high ROI and a quick payback."



# Easing Virtualization Headaches

## Managing Resources & Establishing Solid Plans Can Help Smooth The Virtualization Process

by Elizabeth Millard

THESE DAYS, companies are shifting from seeing virtual infrastructure as a miraculous island of cost savings toward using virtual infrastructure as an integral part of the data center architecture.

“This transition means that administrators are no longer left to their own devices, free to manage the environment how they see fit,” says Lilac Berniker, senior director of marketing and business development for Fortisphere (www.fortisphere.com), a virtualization management firm. “Rather, the customary processes and rules of the greater data center are being imposed on this sandbox, and that is driving the need for more sophisticated management solutions.” With that in mind, here are some problems hampering a streamlined virtualization strategy and a look at how to resolve them.

### Resource Management & Troubleshooting

The first round of virtualizing was so cost-effective that there was little concern

if a virtual machine, or VM, was overallocated resources, as the overall savings were still extraordinary, Berniker says.

She notes, “Now, however, infrastructure groups are being asked to squeeze yet more water from the stone and, in doing so, are

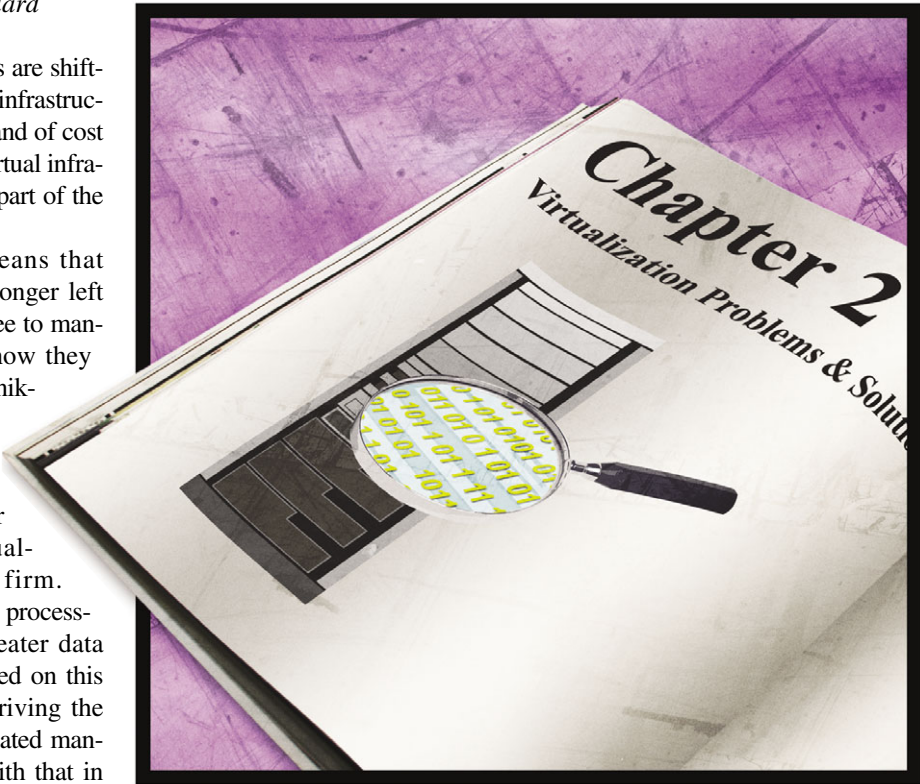
looking to maximize their allocation of all the key resources in the environment, which are CPU, memory, and storage.”

Troubleshooting is another top challenge as companies make the transition toward using VMs in a more integrated way, Berniker adds. The virtual infrastructure, being the newest part of the environment, is often the first to blame when any issues occur in a VM.

“Administrators field dozens of calls and emails and spend countless hours every week, in many instances simply to prove that the virtual infrastructure is not the culprit,” she says. “As is known, the administrator time is among the greatest costs in any data center, so solutions to minimize this overwhelming burden of proof are needed.”

The solution is automation. Automation is typically employed in circumstances where repetitive,

ongoing tasks can be replaced with mechanized alternatives, Berniker says. In the case of resource management, automation can help right-size VMs by identifying which ones are “outliers” for administrators, she says.



### Key Points

- Employ automation to ease resource allocation and troubleshooting issues.
- Pay attention to I/O bottlenecks and add write penalties to the equation to ensure that the actual and effective I/O of the array is taken into consideration.
- Share relevant data about power and cooling across systems.

“Similarly, troubleshooting efforts can be supported by automation that identifies differences between VMs and their baseline templates by easing the comparison of two VMs and by alerting administrators appropriately,” says Berniker.


She adds that the philosophy is to notify the administrators and rectify situations, relieving the staff from the burden of watching the environment in real time or extensively troubleshooting after something goes wrong.

### Undersized Storage Arrays

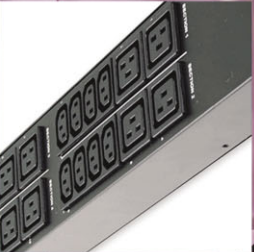


Particularly common in small to mid-sized enterprises, undersized storage arrays can be a challenge, notes Kris Domich, principal consultant for IT services provider Dimension Data (www.dimensiondata.com), who adds that they’re not usually undersized in terms of physical space, but rather are I/O-starved.

For many organizations beginning their adoption of virtualization, the earlier stages of adoption tend to focus initially on underutilized servers often using internal disks. Although these servers may look like ideal candidates for consolidation based on nominal CPU and RAM usage, failure to quantify disk I/O on the preconsolidation server sets and to adequately size a centralized storage platform can result in sluggish performance of virtual servers, Domich says.

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# Staffing Solutions

## Effective Job Postings & Thorough Training Can Ensure You Have The Right People For The Tasks At Hand

by Sixto Ortiz Jr.

THE CURRENT ECONOMIC crisis is a once-in-a-generation event that has impacted hundreds of thousands of lives. But even with the economy hemorrhaging jobs at an astounding clip, the work needed to keep corporate data nerve centers humming along must continue.

In this environment, companies looking to staff the very best people in their data centers face some significant challenges. After all, despite the economic downturn, the fact remains that the population is getting older, so the impending baby boomer retirements will be extremely challenging as enterprises struggle to add new talent.

### Hiring The Wrong Personnel

One of the most vexing problems enterprises face is how to go about hiring the right people for highly technical and demanding positions. Patrick Gray, president of Prevoyance Group, an IT Strategy consulting company, says one of the most insidious IT staffing problems is “our tendency to look for the wrong things when hiring new staff.”

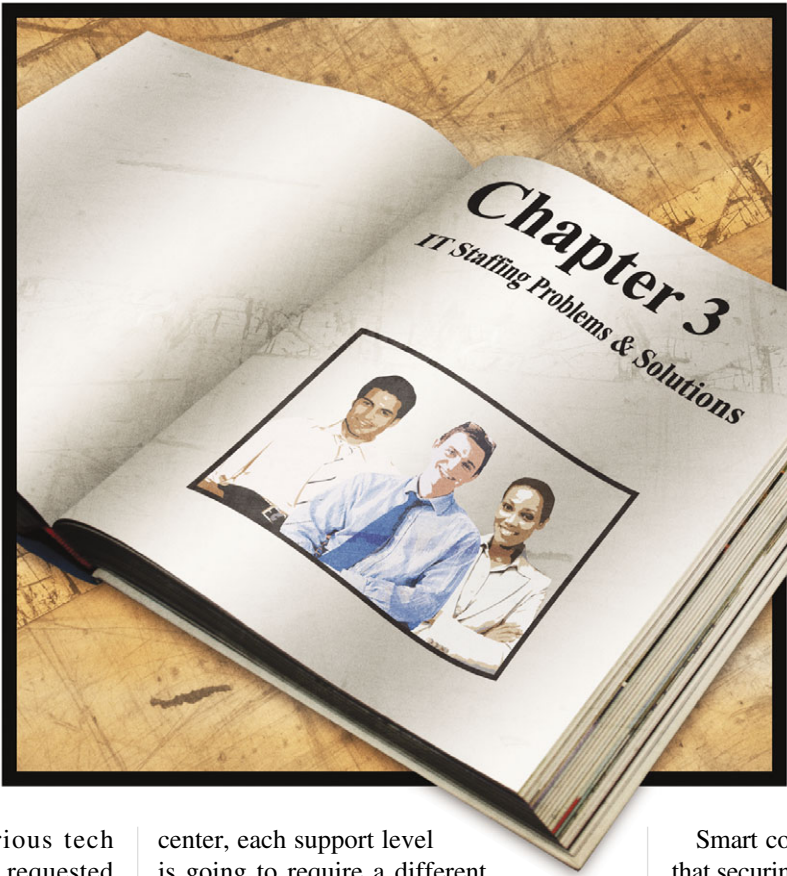
Gray points out that IT often outsources the talent acquisition duties to HR departments, simply providing what he calls “a litany of technical certifications.” So, Gray says, HR personnel mine various tech résumé databases based on the requested certifications and end up hiring people who are heavy on certifications but far too soft on critical skills such as the ability to learn, communicate, and work independently.

The result is people who are hesitant to abandon thousands of dollars of certifications and are reluctant to change with the times whenever new technologies hit the mainstream, a foregone conclusion in the ever-changing world of IT. According to Gray, this problem is evidenced by the “binge and purge” cycle that invariably occurs when IT departments purge people with old technical experience who are unwilling to change and embark on a hiring binge of the same types of people, only this time with different certifications.

The key is to understand that hiring good staff goes beyond simply zeroing in on candidates sporting extensive certifications. Abilities such as critical thinking, effective communications, and the willingness and ability to effectively adapt to an ever-changing technology environment should be front and center during the staff hiring process.

### Training Effectively

Dan Cobb, senior vice president at Yoh (www.yoh.com), a talent and outsourcing services company, says that in today’s data



center, each support level is going to require a different type of training.

“Because of the escalation procedures necessary in the management of a data center,” says Cobb, “over-training can be just as detrimental as under-training employees, since ‘over-trained’ employees may attempt support activities that delay or derail issue resolution.” In other words, administrators and decision makers must carefully calibrate their training programs to ensure that the right level of training is provided in support of the role fulfilled by the employees undergoing training.

According to Cobb, another issue pertinent to training is determining where and when to provide training. For example, administrators must determine whether training should be

provided internally or externally. If training is provided internally, says Cobb, administrators must determine how strong the internal training process must be. After all, training is not an internal competency for most enterprises, so devoting extensive resources to an internal training program can divert talent from core areas where it might arguably be better used.

Finally, adds Cobb, if administrators choose to use a third party to provide training, they should ask themselves whether that third party will know the systems and the environment in the data center as well as internal resources would.

### How To “Market” For Talent

Smart companies are cognizant of the fact that securing top-notch staffs takes more than

### Key Points

- Companies must look beyond certifications and rigid job requirements when hiring staff.
- Companies must market themselves to attract top-notch prospective employees; additionally, it's necessary to effectively describe positions in order to identify the right potential candidates.
- Outsourcing is a viable option for companies that need staff.

simply advertising positions and waiting for highly qualified candidates to apply for them. Ilya Bogorad, principal at Bizvortex Consulting Group, says successful companies realize that they also need to market themselves to prospective employees.

Unfortunately, Bogorad says, even organizations that are very successful at marketing their products and services can be inefficient at marketing themselves to prospective employees. According to Bogorad, common issues that adversely impact the ability to market a company to outside talent include failing to identify the requisite talent group that will fulfill staffing needs, appealing to values that are of no importance to the target group, and failing to practice what is preached.

Bogorad says companies that successfully market themselves to prospective candidates concentrate their efforts on employee groups best equipped to support their strategic goals.

### To Outsource Or Not To Outsource

Outsourcing is one of those terms that elicits an emotional response, and it’s primarily a negative one. However, the fact remains that outsourcing is and should be a viable alternative to meeting IT staffing needs in the data center. So, the problem boils down to deciding what should be outsourced and what should be retained in-house.

G.K. Murthy, senior vice president of Enterprise Solutions at Sierra Atlantic (www.sierraatlantic.com), an outsourcing company, says that when a company does not have the right combination of domain and technical knowledge, it should consider outsourcing rather than trying to fill in gaps by recruiting staff. Murthy says outsourcing can be run like a factory, where different skills are made available as needed without having to bring a full-time expert onboard to address just one technical area.

Yoh’s Cobb says that from a purely numbers standpoint, hiring is crucial for data center administrators who must ensure that the right people are on the job. To be done efficiently, he adds, a contingent of full-time core employees should be balanced with flex employees or outsourced staff.

## Top Problem: Effectively Describing Positions

If administrators are unable to effectively describe the requirements of a position they are seeking to fill, how in the world can they expect to find the right person to do the job? Ilya Bogorad, principal at Bizvortex Consulting Group, says the worst job postings are those that include the position guide in its entirety and are full of acronyms that are unknown outside of the company.

It is impossible, he adds, to glean useful insights from poorly worded job descriptions or postings; worse yet, these postings can project the image

of a dominating bureaucracy, thus turning off potential candidates who may be the best suited to fill the position.

On the other hand, he adds, the best postings provide a very brief description of the hiring company and a concise, to-the-point explanation of the position and the key skills required. Administrators should take the time and effort to ensure job postings accurately and effectively describe what is required for success in a particular staff position they are seeking to fill.

## Easing Virtualization Headaches

Continued from Page 25

Organizations that are planning to consolidate any number of servers must profile the systems, Domich notes, not just in terms of CPU and RAM but also disk and network I/O.

“I/O bottlenecks do not always coincide with high CPU and RAM utilization,” says Domich. “In fact, many of these interfaces, of both integrated and standalone varieties, are designed to offload a portion of the I/O processing from the primary CPU and memory resources.”

Because of this, it’s important to understand the amount of I/O seen by the server

and translate this to the resulting I/O load on the storage and network interfaces. With regard to storage in particular, Domich says, further calculations must be performed to determine the write penalties associated with the chosen RAID level in order to determine how many virtual machines can be sustained.

### Disconnect Between Departments & IT

Often, companies need to take added planning time with managers of other departments to determine the business readiness before server deployment.

“It’s not unusual for some stakeholders to have a lack of understanding and resources to assist in critical tests and migration activities,” says Glen Siemetz, senior director of data center strategy and portfolio at Siemens IT Solutions & Services, a business unit of Siemens AG (www.siemens.com). “This can kill a virtualization project before it begins.”

Informational gatherings can go a long way toward getting managers and other

## Top Problem: Increased Power & Cooling Demands

A major overlooked issue in virtualization decisions is the impact that a new strategy will have on overall power and cooling, notes Chris Davis, global business development manager for TAC (www.tac.com), a provider of building automation solutions.

“Often, facilities and IT assets are not well-integrated and lack a common view of energy,” says Davis. “Historically,

there has been limited real-time monitoring of energy across IT, white space, power, and the building. Power and cooling metrics are not integrated with IT to control energy in the context of maintaining IT gear and processes.”

To address the power and cooling issues, Kris Domich, principal consultant for Dimension Data (www.dimensiondata.com) recommends an

integrated data management system that includes IT/asset service management software, a power monitoring and control system for the electrical distribution infrastructure, and a building management system that monitors and controls all of a building’s functions. Added to this should also be a white space management system with capacity planning and change management tools.

executives to get onboard for projects. Siemetz notes that these stakeholders need to know why and how the virtualization project will affect them.

He says, “Establish a regular meeting group and forum for application ‘owners’ to get input, educate, and keep the lines of communication open.”



# Email Backup & Management Issues

## In The Age Of Compliance & Retention, Handling Email Is A Challenge For SMEs

by Sandra Kay Miller

REGARDLESS OF AN organization’s size or type of business, one facet of the data center carries an equally critical importance—email. The legal acceptance of electronic communication has introduced new risks to those who fail to effectively manage and back up their email systems.

“We find that oftentimes the biggest challenge is that administrators do not always separate the need for data/systems backup (traditional backup) from email backup, which has its own set of requirements,” says Aseem Asthana, product manager for Barracuda’s Message Archiver (888/268-4772; www.barracudanetworks.com).

There are a number of challenges unique to email backup and management that data center managers must effectively address.

### Retention Times

Determining how long to maintain email backups has been a moving target ever since the Supreme Court ruled that email communications are the property of the employer and not the employee. One of the key drivers for creating detailed retention policies is regulatory compliance.

For example, email messages that contain information bound by compliance laws, such as Sarbanes-Oxley, HIPAA, or Gramm-Leach-Bliley, dictate not only the time period for retention but that the messages must also be securely stored so as to protect any confidential or private information contained within.

Another consideration should be whether the information contained in the messages is subject to particular laws’ statutes of limitations, especially in the realm of civil litigation. For instance, a major retailer lost a personal injury case against a truck driver because the retail giant had a two-year records retention policy, but the statute of limitations for personal injury was longer than two years. Had the company retained its records, it would have been able to provide proof that the truck driver was at fault.

Asthana also pointed out that a blanket retention policy isn’t always necessary. For example, he says, “Are there certain employees or departments whose email needs to be saved for longer periods than others?”

Due to the various requirements for electronic message retention, IT departments should work closely with legal council to determine archival times that best meet their specific needs.

### Dealing With Attachments

Along the same lines of discovery, storing and managing attachments to email messages can pose similar challenges. According to Osterman Research, users send and receive more than 23,000 emails in a typical work year, with 24% containing attachments. Many message archives routinely strip off attachments or classify messages for archive by content, attributes, and age.

Kevin Ogrodnik, president of Sherpa Software (www.sherpasoftware.com), points to another issue regarding the archiving of emails with

delivering advanced archival methods, many organizations have opted for a “save all forever” retention policy. Unfortunately, this plan often results in terabytes of unwanted spam emails, personal messages, confirmation receipts, and duplicate messages.

### Key Points

- Proper email retention and management is critical for reducing liability and maintaining regulatory compliance.
- The archiving of email messages and attachments should be treated differently than traditional data backups.
- Automated email archival solutions can optimize email server performance and storage capacity.

In order to maximize capacity for email archives, many organizations offer broad guidelines to users for what types of messages should be saved and what should be deleted.

Scott Whitney, vice president of product management for Mimosas Systems (www.mimosasystems.com), points to solutions that allow companies to automate the process for determining what messages are saved and what gets deleted. “Companies need a way to structure their email content for better access. By deploying a solution that can classify messages, assign specific retention times, and destroy the information at the end of its life cycle, storage capacity is better utilized.”

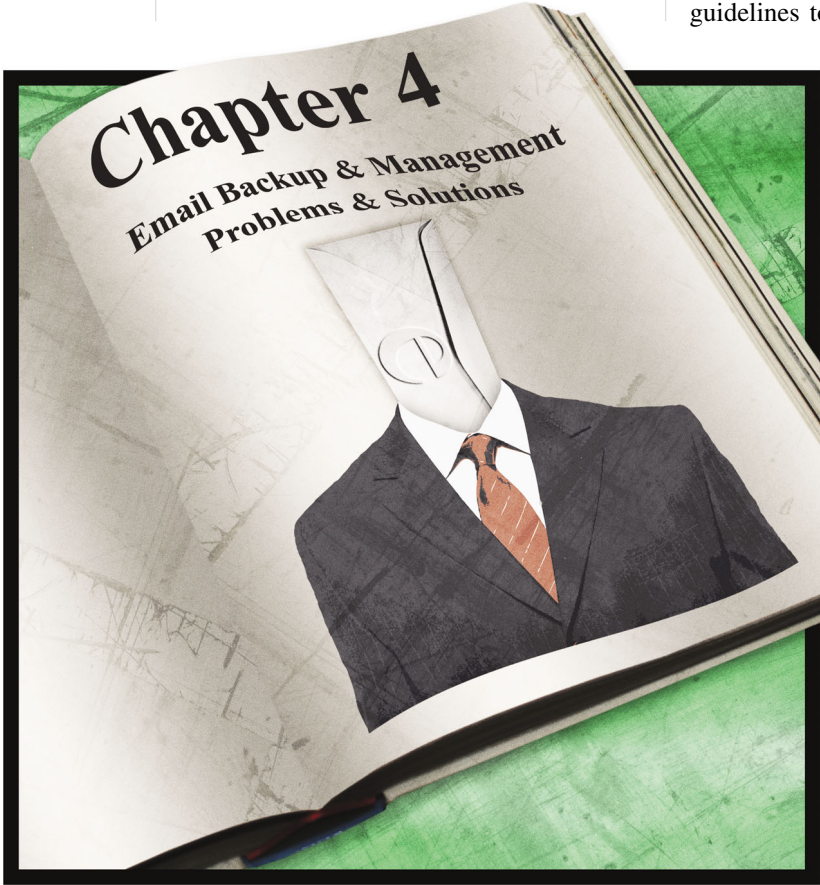
### Preventing Performance Hits

“The increasing amount of email that needs to be backed up can cause traditional backup processes to take longer periods of time, which can degrade overall system performance or disrupt work time,” warns Asthana.

To overcome this type of backup bottleneck, email archival systems should be isolated from traditional data backup systems. Automatically routing messages and attachments into a separate storage location will help to maintain email server performance.

Asthana explains that by turning to an email archiving solution, the storage load on the email server is reduced by moving emails from costly, transaction-based storage required for production email servers to less expensive storage options while ensuring that email remains accessible to users and administrators.

Overall, an effective email backup and management strategy has to take in a number of considerations. A dedicated email archiving solution can help manage the load on mail servers, as well as complement an organization’s traditional data/systems backup strategy and can also assist organizations in satisfying compliance and corporate policy considerations by ensuring that all email is saved and that specific emails can be easily searched for and retrieved. [E]



attachments. “If one person sends a large attachment to multiple recipients, storage requirements for the same information can exponentially multiply.”

Choosing an email archival system that offers attachment management can significantly cut storage space by as much as 40% through such features as single instances, content discovery, and policy enforcement.

### Capacity Planning

There’s no denying that storing data costs money. However, as storage costs continue to fall and new technologies are

the failure to properly manage its retention. Although a retention policy may effectively provide for the timely archiving of messages, discovery is the ability to produce specific information upon request for legal purposes.

Discovery requests for emails can be made by anyone who files a lawsuit against an individual or organization, law enforcement agencies, and regulatory bodies.

### HP’s Hiring Of Former EMC Exec Put On Hold

A court has temporarily barred HP’s hiring of a former top executive at EMC. After the loss of several of HP’s own execs to EMC, the California-based company intended to hire former EMC executive David Donatelli as its new executive vice president for enterprise servers, storage, and networking. However, EMC filed suit in a Massachusetts state court citing a noncompete clause signed by Donatelli, EMC’s former storage division president. Donatelli had filed a pre-emptive suit April 27 in a California Superior Court in an attempt to negate the clause. California does not usually recognize or uphold non-compete contracts.

### Netbook Demand Surges

While demand for computers seems to be at a standstill, netbooks are rising in popularity as a lower-priced computing option. About one-fourth (23%) of American consumers looking to buy a computer in the next three months plan to purchase a netbook, according to a ChangeWave Research survey, which includes a pool of 3,231 U.S. consumers. That’s up 5% from ChangeWave’s



February survey results and 9% from January. Only 12% of respondents plan to purchase any sort of computer in the next three months. Two-thirds of those shoppers are looking at mobile PCs, such as notebooks and netbooks, marking the first rise in demand for mobile PCs in more than a year, according to ChangeWave’s research.

### IBM Buys Data-Discovery Software Developer

IBM has purchased Exeros, a Santa Clara, Calif.-based developer of software that assists enterprises in searching and retrieving data among databases. IBM didn’t disclose details of the acquisition but says the move will strengthen its Information Agenda strategy and provide new capabilities to its Business Analytics Optimization Consulting practice. Ambuj Goyal, general manager of IBM’s information management unit, says, “The combination of IBM and Exeros will enable companies to more intelligently manage their data across all formats and computing platforms, creating a smarter enterprise.” The privately held Exeros was founded in 2002. Former IBM employee Piyush Gupta co-founded the company and serves as its CEO. IBM has reportedly detailed or completed 16 acquisitions in the last 16 months to bolster its software business.

### Xerox Revenue Down In Quarter 1

Xerox reported total revenue of \$3.6 billion for the first quarter, down 18% from the \$4.3 billion reported a year ago. Xerox says delayed decisions in enterprise spending for office equipment were responsible for the drop. Equipment sales fell 30% in the quarter, and Xerox says it saw lower activity through channel vendors. Still, Xerox reported a profit during the quarter with a net income of \$42 million, which is positive compared to the loss of \$244 million a year ago. Xerox forecasts that its full-year earnings will reach 50 to 55 cents per share.

## Top Problem: Finding A Needle In A Haystack

As more electronic communication records are being subpoenaed in legal proceedings, tracking down specific emails can often end up costing organizations significant amounts of resources, regardless of whether the job is done by in-house IT staff or professional forensic services.

Email has become a vehicle of liability for enterprises due to both the content within and



SIX QUICK TIPS

# Uncover Network Problems

## Deal With Glitches Proactively & Put The Right Tools In Place For Troubleshooting

by Elizabeth Millard

NETWORK DIFFICULTIES ARE OFTEN the bane of an IT manager’s existence; if the network sputters for even a few moments, it can put applications, storage, and other resources at risk, not to mention prompt a rash of user support calls. Here are some tips for finding network problems before they turn into nightmares.

### Establish A Baseline

Understanding the health of a network can be similar to thinking about personal health: If you don’t know what healthy feels like, how do you recognize sickness? “One main challenge for most of the harried network administrators out there is finding the time to ‘baseline’ their network, so they can readily identify issues or trends that may lead to problems if left unaltered,” says Glen Siemetz, senior director of data center strategy and portfolio at Siemens IT Solutions & Services, a business unit of engineering firm Siemens AG (www.siemens.com). Creating a baseline will help identify not just issues but also network configuration glitches, he notes, adding that there are a number of helpful tools, especially in the open-source realm, that can baseline

traffic types, users, and network bandwidth utilization. In addition, most WAN-based channel service units and data service units provide network and even application-based traffic information, he says. “Determine your critical paths, place sensors or even a temporary sniffer or probe, and look,” Siemetz says. “You will be surprised at what you discover, and when there are issues, abnormalities will be easy to spot and diagnose.”

### Use A Network Recorder

Even just a few years ago, when a network problem arose, a network engineer would capture some traffic, run an analyzer against the data, and eventually be able to

pinpoint the culprit, says Steve Wong, vice president of marketing at ClearSight Networks (www.clearsightnet.com). Today, this tactic would be akin to trying to break a glacier with an ice pick, he believes. “Network problems are so much more elusive and difficult to locate these days,” he says. “A major issue that occurred this afternoon might be caused by a minor network hiccup yesterday. Thus, an IT best practice is to use a network recorder with a built-in protocol analyzer.” There are recorders on the market that can capture days, if not weeks, of network traffic, he says, allowing for respective network analysis, or the ability to “go back in time” and review network conditions from yesterday or even last week. Some recorders also offer robust visibility into remote network segments and can send

analytics and monitoring results to a central console. This can be especially helpful for incident response but also for forensics and policy compliance. **Employ Network Management Tools** In addition to a network recorder and the type of baseline tools suggested by Siemetz, network management tools can help to diagnose application issues. This is particularly important because most network issues tend to occur at the upper layers of the network protocol stack. Application availability and application response time are the two main culprits responsible for user dissatisfaction and decreased productivity, Wong notes. Network management tools sometimes also have the ability to establish baselines, but Wong believes these capabilities are often underutilized. Used to their full capacity and functionality, these tools can monitor the network to determine when faults occur, find the root cause of problems, and identify trends that can warn the operations team of potential problems. However, when bringing in numerous tools, be careful with cost and in-house expertise. “As networks grow more complex, so do the tools that are used to manage them, and their costs increase,” Wong says. “Similarly, as an IT organization cuts back on staff, there could be fewer and fewer people that have network expertise and can utilize such tools.”

BONUS TIPS

■ **Keep an eye on nonwork network use.** Few, if any, legitimate business applications or functions use P2P resources, yet numerous research reports identify P2P traffic as one of the largest consumers of network bandwidth, says Steve Wong, vice president of marketing at ClearSight Networks (www.clearsightnet.com). He suggests being more diligent about setting strict policies on the use of corporate networks and enforcing the policies regularly.

■ **Do capacity planning.** The need for bandwidth will naturally grow over time, and sometimes problems occur if the growth is not managed properly. If capacity planning isn’t done often, an IT department might find that rather than modestly adding network resources from time to time, it will have to invest in a completely new network infrastructure.

SIX QUICK TIPS

# Virtual Security Is No Walk In The Park

## Virtual Server Sprawl Makes It Challenging To Secure All Devices

by Drew Robb

JUST WHEN IT THOUGHT it might be getting a handle on security, along came rampant virtualization. Because it’s so easy to deploy virtual servers, many companies are losing track of what’s running where. This potentially opens the door to intruders, as so many resources are shared and so many hidden interdependencies exist. “It’s no longer just a server, storage, networking, application, or facilities issue; security is an issue that cuts across all of the technology domains, and thus a cross-technology security solution is needed,” says Greg

Schulz, an analyst with StorageIO Group (www.storageio.com). **Lock Down Virtual Server Interfaces** Intruders who are able to physically put their hands on a system can always compromise it—gaining access to the data center and physically removing hard drives or installing spyware, for example. Now take any virtual platform: Its management interface is, inherently, a network-accessible service that provides hardware-level access to virtual systems. In a virtual environment, then, if intruders gain access to the management layer, they gain entry into the physical system. They

can then extract data from the hard drive at their leisure. “It is crucial to place the virtualization systems’ management interface in a protected environment and to manage it with the same security standards and level of care that the customer places on physical access to mission-critical systems,” says Sadik Al-Abdulla, security solutions manager for CDW (www.cdw.com). The good news is that it is entirely possible to design a virtual environment with security equal to that of a physical environment. But it must be identified as a priority design criteria and given the consideration it deserves.

### The Threat From Within

Virtualization is all about sharing resources such as processors, memory, and network cards. The isolation between two virtual environments sharing the same physical resources, then, is only as strong as the virtualization platform. “It is theoretically possible for a guest operating system to exploit the host operating system and gain access to, for example, adjacent memory spaces,” says Al-Abdulla. “In reality, virtualization platforms have been designed from the ground up to ensure isolation. That’s not to say that vulnerability won’t be found, and certainly not to say that it wouldn’t be patched as soon as it was, but it would be such a carrot that there are many people researching this.”

That opens the door to an attack through a virtual machine. Understanding the risk will ensure that processes are put in place to detect and address such threats. “Someday, someone will find a really interesting vulnerability in one of the virtualization platforms,” says Al-Abdulla. “I consider this inevitable, so understand the risk and have the right procedures in place for this eventuality.” **Adapt Change Management To Virtual Systems** Many companies utilize some kind of system to keep track of changes within the physical environment. Otherwise, an adjustment in one system can wreak inadvertent havoc in another. The same applies to virtual platforms. As virtual servers are quicker to deploy, they are often managed outside of processes and policies governing physical servers. To ensure consistency and maximize uptime and availability, change management processes must account for the unique aspects of managing virtual servers. “Change control processes must be adapted to account for virtual servers,” says Bruce McCorkendale, distinguished engineer at Symantec (www.symantec.com). In the absence of an all-encompassing approach to change management, inefficiencies creep into virtual environments. In response, the different areas of IT adopt different toolsets to solve ongoing issues. “Training requirements for multiple toolsets make it harder to ensure consistent configuration methodologies, opening the door for vulnerabilities,” McCorkendale says. “So-called virtual sprawl is a symptom of lack of control and lack of management capabilities.” He suggests the need for client and server management solutions that provide the

BONUS TIPS

■ **Begin security design by ignoring virtualization.** If a logical system—physical or virtual—belongs on a certain network segment, behind certain protections, then that is where it needs to be. Start from the standpoint of a secured physical infrastructure, and then back into the virtualization design based on the logical security requirements, says Sadik Al-Abdulla, security solutions manager for CDW (www.cdw.com).

■ **Secure end points in virtual environments.** So much attention goes to virtual servers that some SMEs may forget to pay much attention to end points. Bruce McCorkendale, distinguished engineer at Symantec (www.symantec.com), recommends the adoption of an endpoint security solution equipped to secure virtual, as well as physical, platforms.



### Monitor Networks Across The Operation

According to Sue Andersen, director of product marketing at Empirix ([www.empirix.com](http://www.empirix.com)), organizations need to monitor the entire operation by paying particular attention to the impact of the network on the services offered to users.

“It is considerably more efficient to manage a network from the service perspective, addressing the issues that impact the most important services first, than to wait for a customer or user to report a problem and then go look for the cause,” she says.

Detection of a service-impacting event can be difficult, she adds, because too often, a network operations team is told a problem exists by a customer or user. By that time, service has already been affected. A network management solution that can identify trends and recurring problems can prevent issues from occurring in the first place. **P**

### Most Overlooked Prevention Tactic:

## Limit Unnecessary Traffic

A data center manager can reduce unnecessary traffic on a network through the use of router access lists, says Glen Siemetz, senior director of data center strategy and portfolio at Siemens IT Solutions & Services ([www.siemens.com](http://www.siemens.com)). This can act as a first line of filtering for unwanted traffic, as well as a defense in blocking hackers before they even hit a firewall.

Another good practice is to shut off unnecessary router services such as CDP, TCP, and UDP; Bootup Server; DHCP; and certain ICMP messages. This will cut down on traffic and improve security. Similarly, shutting off unnecessary network services in servers and work stations will provide the same benefits, Siemetz says.

### Best Tip For Automation:

## Use Business Transaction Management

BTM helps companies manage IT by letting business transactions flow smoothly through systems without bottlenecks or outages, says Motti Tal, executive vice president of product marketing and business development at OpTier ([www.optier.com](http://www.optier.com)), a purveyor of IT service management software.

By using BTM to identify network problems, Tal believes that issues such as application outages can be alleviated, and organizations can meet service-level agreements by automatically and

continuously tracking every transaction, across all tiers, all the time. This will improve performance and availability, he notes, in both production and preproduction environments.

Another plus is that BTM can reduce the tendency of business transactions to cause bottlenecks because they’re “resource hogs,” Tal says. “Using a BTM solution, these transactions can be easily identified and optimized to free up valuable resources for more important business-generating activities.”

functionality to specify policy and requirements and then discover, measure, and remediate for compliance with policy for all machines. According to analyst firm Gartner, 65% of all system vulnerabilities can be addressed through proper system configuration; 30% through patch management; and the remaining 5% through defense against hackers, thieves, and spies.

“Bringing these three key areas together onto a single management platform can dramatically reduce risk exposure in order to better manage, secure, and recover end points,” McCorkendale says.

### Virtual Networks A Threat

In a highly virtualized environment, SMEs may end up with a multitude of virtual servers on a virtual switch that all share a

single physical switch port. Many network security functions such as intrusion detection /prevention are implemented “at the wire,” yet according to Al-Abdulla, some virtual guests may require a dedicated network interface card, and the occasional virtual switch may need to be cut in two for security reasons rather than logic or capacity.

“This is easy to do if it is given the appropriate consideration,” he says. “The reality is that systems and server engineers should be consulting the network and security engineers during the design and planning process to ensure that the right virtual-physical transitions are made to allow for network security functions to occur. Putting more network interface cards into your virtual farm than you’d think at first glance can reduce intrusion threats.” **P**

### Best Tip:

## Let Common-Sense Security Prevail

Use common sense when it comes to virtual security. If something can happen, it probably will, so it’s just a matter of time. Virtualization and clouds, after all, do not eliminate threat risks. While they might mask or move the issue, there is increased exposure.

“Use common sense, be alert, have a comprehensive threat risk assessment, and perform leak detection proactively, rather than waiting for an after-the-fact forensic exercise,” says Greg Schulz, an analyst with StorageIO Group ([www.storageio.com](http://www.storageio.com)).

### Smart Tip:

## Don’t Be Scared Of The Virtual World

Despite all these cautions, don’t be scared when it comes to using virtualization. It’s a powerful technology that can reduce costs and increase workloads. But like all new breakthroughs, people will always be looking for a backup.

“Virtualization is game-changing technology that has helped us do our jobs more effectively and more cost efficiently,” says Sadik Al-Abdulla, security solutions manager for CDW ([www.cdw.com](http://www.cdw.com)). “Take my doom and gloom in context—as design best practices, not as a cautionary statement.”

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- Remote management and configuration of outlet via Web Browser or NMS
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How To

# Fix Recurring Hot Spots

## Learn To Monitor & Manage Airflow

by Carmen Carmack

**HOT SPOTS THREATEN** the availability and reliability of critical data center applications. If a hot spot goes unnoticed or uncorrected, it can damage IT equipment due to air intake temperatures exceeding recommended maximums. This means that servers and other hardware can experience immediate outages, gradual slowdowns, or even damage that may not cause a failure until weeks down the road.

Hot spots occur when air intake temperatures exceed the acceptable range defined by the data center. Uptime Institute and ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) guidelines recommend a reliability

range for air intake temperatures of 68 to 80.6 degrees Fahrenheit. An area in a room exceeding the acceptable range is a zone hot spot. There can also be vertical hot spots, meaning that just a portion of a cabinet is too hot. To determine how to address both types of recurring hot spot problems, let's look at some of the reasons they occur.

### Common Causes Of Hot Spots

One of the primary causes of hot spots is an insufficient volume of conditioned airflow at the face of the cabinet, says Lars Strong, P.E. senior consultant at Upsite Technologies (888/982-7800; [www.upsitetechnologies.com](http://www.upsitetechnologies.com)). The Uptime Institute conducted a study of 19 computer rooms and published its findings in the "Reducing Bypass Airflow Is Essential for Eliminating Computer Room Hotspots" white paper. The study, contracted by Upsite Technologies, revealed that vertical hot spots commonly occurred because the

### Key Points

- Appointing one or two people to manage the cooling infrastructure in a data center helps reduce operational errors that contribute to hot spots. These individuals should have a good understanding of the room dynamics.
- Preventing bypass airflow, where cooled air is escaping through gaps in cabinets and other areas, is often a key strategy for addressing hot spots.
- Managing airflow and separating hot exhaust from cooled intake air are the best strategies for hot spot reduction. The specific techniques for meeting these goals can vary depending on the facility and room.

internal fans within the computer equipment at the bottom of a cabinet consumed the supply of cold air coming from the nearby perforated tiles. With no cool air remaining, the equipment above pulled air from the hot exhausts of adjacent equipment or from the ambient room conditions.

"Even if you have a sufficient volume of conditioned air on a per-tile or -grate basis, you can still have hot spots. The causes are open spaces in the cabinets that are not sealed," Strong explains. In the Uptime Institute study, 60% of the available supply of cold air was escaping back to the cooling units, so only 40% of the cold air supply was directly cooling IT equipment. The remaining 60% of cold air mixed with the exhaust air exiting from the heat load. Known as bypass airflow, the cooled air escaped through cable cutouts, holes under cabinets, or misplaced perforated tiles.

Another contributing factor to hot spot problems is related to the installation of new

denser equipment. As noted in the Uptime Institute study, increasing heat densities lead to less-reliable equipment performance and fewer manufacturers honoring fixed-price maintenance contracts. And the study found that between 3.2 and 14.7 times more cooling capacity was running in the sampled rooms than necessary for the heat load. "It's actually very rare that there is insufficient capacity to handle the increased density," says Strong. "Most of the time, there's ineffective conditioned airflow management that is causing the problem."

### What To Do

Ideally, one or two people need to manage the cooling infrastructure in the room. Strong explains that these individuals should have a very good understanding of the dynamics in the room. Decisions and tasks such as placing perforated tiles, locating cabinets and cooling equipment, and installing blanking panels should be carefully managed. "Until you deal with the human side of it, all of these things can get moderately implemented and then quickly dissolve," says Strong.

Monitoring is an important tool for detecting and mitigating hot spots. "There are a number of really simple monitoring tools, like a handheld infrared thermometer," says Strong. Other best practices include monitoring the supply and return air temperatures of your cooling units from a central location using an alarm function to notify you of potential problems. For complex installations, remote monitoring tools installed in each cabinet or in multiple locations within each cabinet are available. Cabinet monitors only need to measure intake air, Strong says.

Managing the separation of conditioned airflow from return airflow and techniques

If a hot spot goes unnoticed or uncorrected, it can damage IT equipment due to air intake temperatures exceeding recommended maximums.

How To

# Measure PUE

## Is Your Enterprise Energy Efficient?

by Jean Thilmany

**CALCULATING PUE** (power usage effectiveness) is an easy way to gauge energy distribution within your data center. PUE is the ratio of electricity coming into the data center to the electricity specifically used to power IT equipment. It is a widely accepted benchmarking standard proposed by the Green Grid, a nonprofit consortium, to help IT professionals determine the energy efficiency of their data centers and to help them monitor the impact of their efficiency efforts.

"In most organizations, people have no idea what their data center power efficiency is," says Kenneth Uhlman, director of data center business development at

Eaton (877/785-4994; [www.eaton.com](http://www.eaton.com)). "Most organizations don't know how much energy is spent—or wasted—in their data centers."

Of course, before you can raise your data center's energy-efficiency level, you need to know exactly how efficient it is. This is where PUE comes in, says Jon Haas, director of Intel's eco-technology program office. The measurement ratio gives data center managers a starting point from which to look at decreasing the amount of power running into the data center.

"PUE is a way to understand how the energy coming into your data center gets apportioned and partitioned," Haas explains. "The goal is to decrease power that goes to [the] infrastructure and to make sure as much of that power as possible goes to the IT equipment, which does the productive work from the data center perspective."

### Key Points

- PUE is a relatively easy number to obtain. Your goal over time is to see how low you can get the number—the closer to one, the better.
- Measure total power entering the data center at its input power meter. Measure net IT equipment usage at the UPS.
- Utilize an efficiency-savings spreadsheet to get an idea of how much your enterprise will save.

### Gather Measurements

In 2007, the Green Grid released its PUE metric: Take the amount of total data center facility energy and divide it by the energy used exclusively for the IT equipment (computer, storage, and network equipment, as well as the switches, monitors, and workstations used within the data center). Haas says the more efficient the data center, the closer that number is to one.

"A measurement of one means all the power is going to the IT equipment," he explains. But most of today's data centers don't meet that perfect target. The idea is to try to lower your data center's PUE over time to as close to one as possible. But, as with most things, a number of external factors can affect the PUE measurement and can vary from data center to data center, depending upon the type of enterprise.

Still, at many data centers, only about 3% of the energy entering the center is used for computing, Uhlman says. Other considerations, such as heating and cooling, account for the remaining energy.

Measuring the PUE at your data center is relatively straightforward, Uhlman explains. You can measure total power in at the data center input power meter. Net IT usage is measured at the UPS. Those two data points create the ratio.

### Calculations & Spreadsheets

In a recent report, the Green Grid defines three levels for measuring PUE. The basic level is what Uhlman outlines in the previous paragraph, and it is measured monthly. At the intermediate level, the measurement becomes more exacting. For this measurement, facility power is the data center input power minus the shared cooling number. Measurements at this level are collected daily. At the advanced level, facility power is the data center input less shared cooling plus power for building lighting and security. Advanced-level measurements are gathered every 15 minutes.

When PUE is measured every 15 minutes, managers are better able to determine how variable their facility's data energy consumption is and to isolate those variables. They can also determine whether and how much outside factors, such as security issues, affect variability.

The next step is to determine how much money your enterprise will save in energy costs by improving data center efficiency, Uhlman says. After calculating your current PUE benchmark and entering in some basic data about your facility, many of the efficiency-savings spreadsheets available will

### TOP TIPS

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"><li>• PUE compares power coming into a data center and power used strictly for IT equipment to measure the center's energy efficiency.</li><li>• You can gather measurements at intervals that range from monthly to every</li></ul> | <ul style="list-style-type: none"><li>15 minutes depending on how tight an energy usage snapshot you need.</li><li>• Don't compare your data center's PUE to the PUE of other data centers. A number of factors, including the way the measurement is</li></ul> | <ul style="list-style-type: none"><li>taken, can affect the PUE number.</li><li>• When looking to make your data center more energy-efficient, remember to include the facilities management department in conversations.</li></ul> |
|--|---|---|



that separate the cold supply air from the hot exhaust air are critical to preventing and eliminating hot spots. “The larger the delta between the cold aisle and the hot aisle, the more efficient your room is operating in general,” says Strong. “I know so many data center managers that have made choices on how their airflow is managed based on the comfort of the people working in the room, as opposed to the reliable operation of the equipment and reducing operating costs.”

LBNL (Lawrence Berkeley National Laboratory), a U.S. Department of Energy National Laboratory, conducts testing and makes best-practice recommendations for managing data centers. To manage airflow, LBNL recommends using hot aisle/cold aisle arrangements, rigid enclosures to separate hot air exhaust from the cool air intakes, flexible strip curtains to block the

open space above racks or cabinets, and blanking panels to block unused rack positions.

If the IT equipment does not have a front-to-back cooling airflow configuration, LBNL recommends configuring the cabinet so the equipment discharges hot air away from the cool air intakes. It’s also important to select racks or cabinets with good internal airflow.

“Curtains, cold aisle containment, hot aisle containment, overhead supply, under-flow supply—all of those things can be workable solutions if a holistic understanding exists of the facility,” says Strong. “There is no one solution for everything—you can make things work well on a slab; you can make things really efficient on a raised floor. It is really dependent on the facility and a comprehensive understanding of all that’s happening there.”

## TOP TIPS

- **Don’t over-provision cooling system capacity.** According to the Uptime Institute and Upsite Technologies, overcapacity can actually make hot rooms even hotter. “When data center managers have hot spot problems, their vendors recommend additional cooling infrastructure, leading to massive capital expenditure, disruption of the data center, risk of downtime events, and more monthly operating costs,” says Lars Strong, P.E. senior consultant of Upsite Technologies (888/982-7800; [www.upsite technologies.com](http://www.upsite technologies.com)).
  - **Don’t rely solely on a CFD (computational fluid dynamics) study.** The Uptime Institute and Upsite Technologies recommend that CFD modeling should be used only after
- bypass airflow has been reduced below 10% and then only after values assumed in the model for cooling unit airflow and sensible cooling have been field-measured.

  - **Don’t solve bypass airflow problems without knowing how cooling is occurring.** Many hot spot and conditioned air problems are a result of bypass airflow. Sealing all open spaces in cabinets with blanking panels so there are no gaps is critical. However, the Uptime Institute and Upsite Technologies recommend that data center managers first complete a baseline study of how cooling is occurring. Closing too many openings in the wrong order or too quickly can dramatically disturb existing ambient cooling conditions.

let you enter different goals to see how much your enterprise will save. One such spreadsheet is available from 42U ([www.42u.com](http://www.42u.com)). An efficiency ROI spreadsheet, for example, lets you determine ROI on infrastructure assets such as power or cooling you’re considering adding.

### Meet With Facilities

Before moving forward with efficiency upgrades, Uhlman urges IT managers to meet with their facilities managers. Together, department heads can hash out how best to increase efficiencies. In many enterprises, these two departments don’t speak enough or are even at odds with each other when it comes to determining how to best cut energy use.

“In the data center space, the person that buys the IT computers is the chief information officer and the person that pays the

They’ll cost me more up front, but the carbon footprint and energy bill will go down,” he says. “Before, he may have been looking at it like: ‘I don’t pay the energy bill. I have a fixed budget from which to buy computers. I’m just going to buy inefficient computers because they’re the least expensive.’”

### Don’t Dare To Compare

Uhlman cautions that enterprises should not be overly eager to compare their data center’s PUE to the PUE of other data centers. A number of factors, including the way the measurement is taken, can affect PUE numbers. And, of course, comparing data centers across industry or data centers located at various U.S. locations can make for a meaningless match.

The Green Grid is working to define segments of the data center industry to offer


## Enterprises should not be overly eager to compare their data center’s PUE to the PUE of other data centers.

energy bill is the vice president of corporate real estate,” he says.

In many instances, IT departments have been unaware of the data center’s energy costs prior to gathering PUE measurements. Uhlman explains that measuring PUE gets everyone on the same page and ready to converse and take definite steps to move forward.

“So, the CIO would then say, ‘I need to buy more energy-efficient computers.

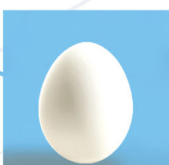
better PUE targets across these segments. PUE is affected by factors that include whether the site is used primarily for testing or production; if the business is financial, health care, data center colocation, or something else; and what the data center’s tier level is, according to the organization. Uhlman adds that a center in a cooler climate may be able to support less-expensive cooling methods than does a center located in Phoenix.”




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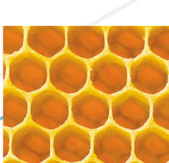
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### Microsoft Responds to EU . . .

Microsoft has met the deadline for responding to European Union antitrust allegations that Microsoft “shields” its Web browser, Internet Explorer, from competition by coupling the browser with Windows operating systems. The contents of its counterclaim are confidential. Microsoft was originally scheduled to respond March 12, but the EU allowed Microsoft two extensions. In December 2007, Opera Software ASA, the Oslo-based development firm, filed a complaint with the EU. In January, EU antitrust regulators ruled Microsoft manipulated the competition in the browser market by including IE with Windows.

### . . . & EU Sets Antitrust Hearing Dates For Microsoft

Microsoft will appear before the European Union June 3-5 for its hearing on whether the bundling of the Internet Explorer browser with Windows unfairly harmed competition. The software giant officially responded April 28 to the EU’s antitrust charges with a statement of objections. The June hearing will give Microsoft the opportunity to orally present its rebuttal. In its latest Release Candidate for its upcoming OS Windows 7, the company has included a setting to allow users to turn off IE.



### D-Link Releases Top Executives

D-Link has let go two of its top executives, President and CEO Steven Joe and Executive Vice President and Channel Chief Keith Karlsen. The departures were part of an overall reorganization of D-Link’s senior management structure and consolidation of the company’s North and South American structure. Joe had been with D-Link for more than two decades; Karlsen joined D-Link in 2002. Carlos Casassus Fontecilla will become D-Link’s new Pan America president, while Nick Tidd will become the vice president of sales for Pan America and vice president of marketing for North America.

### Qwest Posts Income Gains

Despite a slip in revenue, Qwest Communications posted substantial first-quarter gains in net income and earnings per share. The company brought in \$206 million in net income in the first quarter, which was up 16% from the fourth quarter and 37% year-over-year. This corresponded to earnings of 12 cents per diluted share, a 20% sequential and 50% yearly gain. Cost-cutting played a role in bumping up margins. In addition, strong demand for broadband, data, wireless, and IP services helped the company grow its user base.

### Sun Revenue Down

Sun Microsystems reported a sharp drop in revenue during its third fiscal quarter as a result of decreasing technology sales and uncertainty about the company’s future. Sun’s revenue for the quarter was \$2.61 billion, a drop of 20% from \$3.27 billion a year ago. It’s the largest drop in the company’s third quarter sales since 2002. Analysts predicted that rumors of Sun’s acquisition by IBM would disrupt the company’s sales at the end of the quarter. In the end, Sun favored a bid from Oracle, which bought the company for \$7.4 billion.

# Save Money On Client Security Software

## Feature Consolidation, Vendor Competition & Targeted Products Can Reduce Costs For SMEs

by Kurt Marko

. . .

IT AND NETWORK MANAGERS are the field generals in an escalating and often frustrating war with hackers bent on compromising enterprise PCs. Client security software is a bulwark against attacks on sensitive information and systems. Security remains a core IT responsibility as evidenced by a recent survey of 1,400 CIOs by Robert Half Technology, in which security topped the list of top technology investments for the next year.

PC client, or endpoint, security is one element of a comprehensive, layered defense strategy. But because of the multiplicity of threats, security software evolved as distinct point products.

As Info-Tech Senior Research Analyst James Quin notes, the proliferation of malware and associated blocking tools has become “so common that it is rarely given a second thought . . . and many enterprises are overprovisioning in terms of vendors and perhaps even analysis points.” There are several tactics for reducing the cost of endpoint protection, ranging from vendor management and policy enhancement to architectural changes and administrative streamlining.

### Consolidate Vendors & Packages

Experts agree that endpoint security suites are preferable to point products for a variety of reasons: They offer an integrated set of security features with lower impact on client performance; provide a single administrative console; and are less expensive to license, deploy, and maintain.

Michael Argast, director of global sales engineering at Sophos (www.sophos.com), says he’s seen a distinct and accelerating trend toward the use of suites. To quantify the savings, Joan Fazio, director of product marketing at Symantec (www.symantec.com), points to a recent study it conducted that shows centralized security could reduce management hours by about 75% and help desk calls by 65%, and it “makes it significantly easier to add, remove, and update user security profiles.” Overall, Symantec’s study estimates that using centralized security could result in savings of more than \$280 per end user in the first year.

Dan Blum, senior vice president and principal analyst at Burton Group, emphasizes

### Key Points

- Malicious software has so many threatening elements that client anti-malware software is a necessity.
- Consolidating security purchases with a single vendor offers greater pricing leverage and may reduce administrative overhead by eliminating multiple management platforms.
- Alternative client platforms can reduce threat exposure and resulting expense on endpoint security, but they aren’t a general-purpose solution for most enterprises.

the importance of picking a strategic vendor. “Vendors are hurting just as badly as many of their customers. They may be more inclined to provide deep discounts or throw in services as part of long-term strategic deals,” he says.

“2009 is a great time to ‘buy low’ in the IT security market, especially when the plan is to consolidate on fewer vendors,” Blum says, noting that the recession gives IT departments leverage with vendors. Info-Tech’s Quin cautions that when consolidating to a single vendor, enterprises need to ensure the vendor can cover all required platforms, including Windows, Mac OS X, and Linux; solutions for servers or NAS systems; and network gateway appliances.

### Consider Free Solutions

A number of serviceable client security suites are free for downloading, and Blum says cash-strapped organizations may find these appropriate for at least some of their users and certainly better than nothing. He adds that SaaS security services, available from most major security vendors, offer a middle ground between full-featured suites and free software. While these require an annual subscription per client, Blum says they eliminate the need for local server infrastructure and help desk support.

But Quin advises caution before lowering the guard to save a few bucks per machine. The deperimeterization of modern enterprise networks means the gateway is only one way in which threats can be introduced to the network, Quin says. “The prevalence of laptops and USB-attached devices have

made it almost as likely that a threat can be introduced internally while improperly protected wireless networks can allow gateway security mechanisms to be completely bypassed by outsiders.”

### Non-Traditional Alternatives

The vast majority of malware targets Windows PCs, so eliminating that threat vector is one way to reduce costs. This is easier said than done, Blum says, because most enterprises have applications that rely on Windows. But, he says, “if you have task workers that can get by without it, that’s a viable option.”

There are several replacements for the traditional PC, including systems running an alternative OS, thin clients with an embedded OS, or centrally managed remote virtual desktops. While each can reduce endpoint vulnerability, none is foolproof. Although OS X and Linux aren’t susceptible to most attacks, their relative immunity stems more from obscurity than impenetrability: There just aren’t enough systems to make it worth a hacker’s time. In addition, as Argast notes, either can act as a virtual “Typhoid Mary,” i.e. recipients and carriers of infected files that are spread to Windows systems.

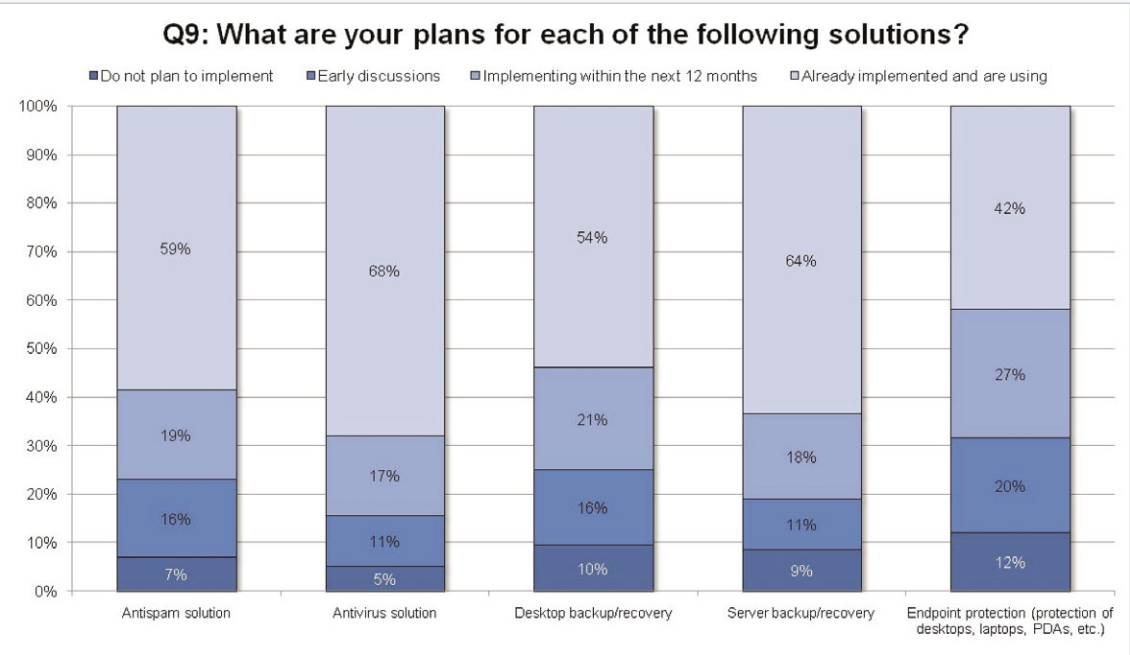
In addition to application compatibility issues, ditching Windows also creates additional OS administration, end-user support, and training expense. “I’m not a big fan of ‘out-of-the-box’ when a bunch of pretty good ‘in-the-box’ solutions exist,” says Quin. He says that standardizing software and configurations, turning off unnecessary OS services, eliminating local administrative user rights, and rigorously patching applications are sufficient to maintain adequate Windows security. “These are pretty basic and not very sexy, but they are solutions that are free and will all serve to make end points more secure.”

Malicious software is one of the unfortunate side effects of the flexible and pervasive Windows platform and the open, unrestricted Internet. As Blum observes, anti-malware products remain indispensable in many IT environments. Thus, “individuals and enterprises are forced to pay an annual ‘anti-malware tax.’” Consolidating endpoint security under the umbrella of a comprehensive software suite can reduce the tax but not eliminate it. More radical remediations such as abandoning Windows entirely are feasible for high-risk or limited-functionality applications but aren’t yet realistic for most enterprise users. [P]

## SMEs Often Go Without The Basics

Small to midsized enterprises understand the security risks they face, but a surprising number neglect basic safeguards. For example, 59% of SMEs have not implemented endpoint protection (software that protects end points such as laptops, desktops, and servers against malware), and 42% do not have an anti-spam solution. Almost half do not back up their desktop PCs, leaving their important information at risk, and one-third of SMEs do not have antivirus protection.

SOURCE: “STORAGE AND SECURITY IN SMBs”; 2009 SURVEY RESULTS OF 1,425 SMALL AND MIDSIZED COMPANIES BY APPLIED RESEARCH FOR SYMANTEC; FEBRUARY 2009.





# Improving IT’s Image & Brand

## Employ Traditional Marketing Techniques To Engage Customers & Enhance Status

by Kurt Marko

• • •

If IT departments were consumer products, their brand images would rank near the bottom. The stereotypes are all too familiar, personified by Dilbert’s nemesis, “Mordac the Preventer of Information Services”: IT people are nerdy, arrogant, insular, and unresponsive.

Although those traits are far from universal, Info-Tech Senior Research Analyst Jennifer Perrier-Knox says their genesis is IT’s historical isolation; specialization; and unique, jargon-heavy vocabulary.

Yet there are signs these old perceptions are increasingly inaccurate. Alexander Peters, principal analyst at Forrester Research, says a recent survey of 600 executives found that the vast majority see IT as strategic to their business, although far fewer are satisfied with IT’s execution.

There are a number of strategies IT departments can take to improve their image, including adopting a customer-service attitude and achieving better alignment between IT projects and overall business objectives. Developing a customer-centric, service-provider mindset while increasing communication between IT and its users doesn’t imply a costly marketing campaign, Perrier-Knox says. Existing staff can handle most of the branding activities, without the need of expensive outside consultants.

### Customer Expectations

Branding is a marketing technique that creates and synthesizes customer expectations about a product or service while fostering an emotional response and customer loyalty. Brands are a “promise to deliver specific products or services and its credibility based on reputation and the visitor’s possible previous experience,” according to Perrier-Knox, and require message clarity and credibility.

The first step to image enhancement, Perrier-Knox says, is determining the perceptions of IT among business managers and users. Mike Rollings, senior analyst at

Burton Group, agrees that IT managers not only need to understand users’ perceptions, but also the underlying assumptions and historical causes of their beliefs. He recommends having substantive, one-on-one conversations with key business leaders throughout the company to assess their views of IT. Such “market research” is a necessary prerequisite for developing IT’s brand identity, which Perrier-Knox stresses must be driven by genuine business needs.

IT’s brand rehabilitation starts by “putting a face to IT,” Perrier-Knox says. She recommends a number of tactics that can humanize IT and allow staff to show their personalities. These include hosting events such as brown-bag seminars, distributing newsletters (carefully scrubbed of geek speak and written in plain English), and increasing visibility with colleagues through informal watercooler chats or extracurricular social interactions.

IT managers should develop relationships with their peers in other business units. “These [contacts] can pave the way for future work,” Perrier-Knox says. Rollings cautions that merely increasing the level of communication isn’t sufficient; improving IT’s image often requires fundamental organizational transformation.

Because the help desk is most users’ first (and often, only) contact with IT, Perrier-Knox advises developing a culture of customer service within the client support organization: making the help desk easier to access and use can greatly improve perceptions. This will likely entail improvements to both support processes and personal attitudes, items that may require training and coaching. Perrier-Knox adds that techniques such as Web-based request forms, user-accessible status updates, interactive chat, and online knowledge bases or other self-help resources are effective methods for improving customer satisfaction.

### Improving Business Satisfaction

IT’s image is also enhanced by improving its business value, says Forrester’s Peters.

### Key Points

- The image of IT departments is historically and disproportionately poor, with roots in its isolation, technical focus, and insular culture. This image is changing as business executives increasingly see IT as a strategic part of the enterprise.
- Traditional marketing techniques such as brand management, product or service feature mix, and structured communications can help IT’s image and improve its fulfillment of end-user needs.
- Help desks can serve as powerful vehicles for transforming user perceptions because they are the one IT function used by almost all employees and their first point of contact with the organization.

“Today, many firms strive to transform their traditional IT cost centers into providers of business technology services,” he says. Burton Group’s Rollings says that running IT like a business involves increasing operating effectiveness and efficiency while also building consistent connections between business units and IT—what he terms “synchronization.” He sees IT evolving to become “an innovative broker of solutions from both inside and outside the organization.”

IT managers also need to demonstrate they can meet service commitments, often through SLAs and service dashboards. Peters says IT organizations need to measure the key contributors to customer satisfaction, using both qualitative factors and quantitative data. The former might include individual interviews or focus groups, while the latter incorporates user surveys or complaint and ticketing systems. Perrier-Knox agrees with the need for measurement, but she says it’s equally important to follow up on customer feedback to show users that issues get resolved and systemic problems lead to substantive changes.

Proactively engaging with business managers to assess their IT needs is important, Peters says, but IT must also be more aggressive—even pushy—in promoting its services. He notes that many larger, more mature IT departments are staffing marketing positions to plan and execute internal campaigns. He says these should use traditional marketing techniques such as the Marketing Mix, also known as the four P’s (product, price, promotion, and place) in defining and publicizing services targeted at various departments or job types within the enterprise.

Peters says the heart of any strategy to improve IT’s business value is effective portfolio management. IT leaders need to understand who their customers are and what they need and then develop a portfolio of services that strike a balance between innovation and cost control.

### Sense Of Urgency

Rollings says economic pressures are building the requisite sense of urgency for IT departments to initiate some self-examination, including the assumptions underlying their existing organizational structure and service portfolio, while also providing the impetus to re-engage with business customers. These activities will ultimately lead to transformative changes and an improved image.

But it is important for the transformed IT department to communicate its success. Burton Group analyst Ken Anderson says, “Self-promotion, once reserved for savvy marketeers, is a valuable tool for business-focused IT professionals. Identifying, communicating, and rewarding success fosters employee development and promotes IT awareness and an overall sense of pride.”

Perrier-Knox says that strategies and tactics from traditional brand management can counter IT’s disproportionately poor reputation and “raise IT’s status to that of a strategic partner.”

### News

#### SAP Q1 Profits, Revenue Fall

SAP AG’s profits dropped 16%, and revenue was down 3% in the first quarter. The Frankfurt, Germany,-based software company reported a total revenue of \$3.18 billion (2.4 billion euros), which is down 2.6% from \$3.26 billion (2.46 billion euros) in the first quarter of last year. The company’s software sales were down 33% from \$824.1 million (622 million euros) to \$553.8 million (418 million euros). After the announcement, SAP shares fell 4.4% in early trading; over the past 12 months, its shares have fallen 8.5%. The company laid off 1,620 employees and is expected to lay off more, bringing its workforce to less than 50,000.

#### Mobile App Revenue To Rise

Mobile applications will be generating revenue to the tune of \$25 billion by 2014, according to a recent study by Juniper Research. The report states that the majority of application revenues are currently from one-off downloads such as those from Apple’s App Store, which recently logged its 1 billionth download. However, Juniper expects this revenue stream to change in the coming years, and, by 2011, it says value-added services will provide the majority of application revenue. Juniper expects more operators to launch their own app stores in the near future.

#### Researchers: Foreign IT Pros Earn More Than U.S. IT Pros

Using data from 50,000-plus IT professionals taking part in salary surveys conducted from 2000 to 2005, researchers Sunil Mithas and Henry Lucas of the University of Maryland found foreign IT pros (including H-1B visa, L-1 visa, and green card holders) reported wages 5 to 9% higher than what U.S. citizens with comparable skills, educational degrees, and IT experience reported. The report conflicts with arguments that temporary work programs result in employers hiring less expensive foreign labor. Mithas says that, while U.S. employees are generally rewarded based on their education level, noncitizen IT workers are rewarded based on their IT experience. “By hiring these people, it helps a company to deliver products and services for a global market, to make



connections to those global markets,” he says. The researchers found that noncitizen IT workers with green cards earn 6.1% more than noncitizen employees with H-1B or other types of work visas.

#### Verizon Blocks Telemarketers

Verizon Wireless recently blocked two companies, National Auto Warranty and Explicit Media, from telemarketing extended automotive warranties to Verizon Wireless customers. Verizon received \$50,000 from a settlement with the two companies, and it plans to donate the money to the Joyful Heart Foundation. Verizon says it will continue to identify and stop other unscrupulous dialers from telemarketing scams to Verizon Wireless customers. The telemarketers used autodialers to call customers and spoofing techniques to mask the origin of the calls.

## Key Business Satisfaction Process Steps & Outcomes

IT leaders should regularly provide quantitative measures of business satisfaction and integrate them with the other key metrics of their IT performance scorecards. To produce the quantitative measures, IT leaders need a stable process that determines whether and how well IT satisfies business needs, predicts what business satisfaction will be, and determines what must be done to improve it.

Business satisfaction process steps	Key outcomes
1. Develop a business satisfaction framework.	<ul style="list-style-type: none"><li>• The key sources of business dissatisfaction</li><li>• Potential remedial actions</li></ul>
2. Conduct research and identify an analysis approach.	<ul style="list-style-type: none"><li>• What is important to business satisfaction</li><li>• Segmentation of the customer base</li><li>• Survey targets, content, and measurements</li><li>• Technical and organizational prerequisites for surveys</li></ul>
3. Survey the business and analyze the results.	<ul style="list-style-type: none"><li>• Quantitative survey results</li><li>• Analysis and recommendations for improvement</li></ul>
4. Ensure business satisfaction.	<ul style="list-style-type: none"><li>• Improvements to existing services and the development of new ones</li><li>• Improvements to the processes that ensure reliability, assurance, and empathy</li><li>• Measurements and service levels tuned to better meet customer expectations</li><li>• Marketing campaigns to improve the business-IT relationship</li></ul>

SOURCE: "IT MUST 'GET' BUSINESS SATISFACTION: MEASURING AND IMPROVING BUSINESS SATISFACTION REQUIRES A FRAMEWORK"; FORRESTER RESEARCH REPORT BY ALEXANDER PETERS, PH.D.; MARCH 20, 2009.



News

Study: Laptop Theft More Costly Than You Think

The common-sense calculation of the cost of a lost or stolen laptop is usually just the price of replacing the notebook itself and possibly some software. According to a recent Intel-sponsored report from the Ponemon Institute, however, the actual cost is much higher. The study places the “real” value, expressed as a dollar amount, of a pilfered notebook at an average of \$49,246.

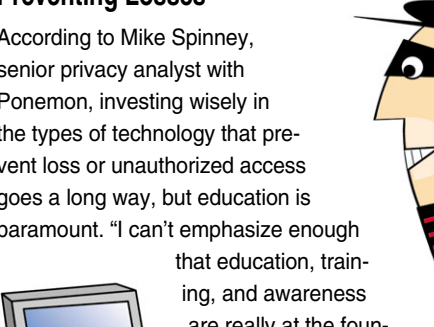
The factors in the cost analysis include the actual cost of replacing the hardware and software; the employee’s time spent recovering the notebook and data and reporting the issue; the time IT employees must subsequently spend on forensic analysis; how much the lost data will cost the company; the cost of lost intellectual property and loss of productivity; and a smattering of legal, consulting, and regulatory costs.

Another interesting fact from the study is that although the average value of a CEO’s notebook is high, the value of lower-level employees’ notebooks, such as directors or managers, is actually higher. This is due to the type of information one would find on the respective employee’s computer.

By far, a data breach causes the most damage for companies in the event of a missing laptop; while the cost of replacing a computer is about 2% of the total loss, data breaches account for a whopping 80%. With a precaution as simple as encryption, the cost of a lost or stolen notebook plummets by about \$20,000.

**Preventing Losses**

According to Mike Spinney, senior privacy analyst with Ponemon, investing wisely in the types of technology that prevent loss or unauthorized access goes a long way, but education is paramount. “I can’t emphasize enough that education, training, and awareness are really at the foundation of any effective security program,” he says.



Small to medium-sized enterprises are not any less or more vulnerable than larger organizations, but the nature of their size can make them more attractive to thieves. Thieves may target SMEs because they see them as an easier target, with less of a risk of being caught.

Further, a smaller company’s lack of monetary resources can leave it exposed in the case of a lawsuit caused by the theft. “If you have one person on your payroll whose information is on a laptop computer and that information somehow becomes ‘at risk,’ whether through a loss or a theft, that individual and your company are now ‘at risk’ because of that lapse of security,” says Spinney. The employee could sue the employer for the theft of his identity, and if the employer’s resources are limited by size, the suit could be a deathblow for the company.

The bottom line is that companies need to do more to educate and prepare their employees for the repercussions of laptop loss and take added measures to guard against the true monetary value of the loss.

by Seth Colaner

# Battle From Within

## Tools To Fight Insider Threats

by Christian Perry

IT SECURITY PERSONNEL regularly face the daunting task of protecting their enterprises from external threats that continue to strengthen in both complexity and effectiveness. But dangers to data don’t always begin at the outer walls of the enterprise; on the contrary, insider theft is rising at a striking pace.

According to a recent study by Symantec and the Ponemon Institute, 59% of former employees steal confidential company information, including customer contact lists and other customer information, email lists, employee records, and nonfinancial information. The study also revealed that 24% of former employees retain access to their employers’ computer systems or networks after their departure.

“Part of the reason that a lot of traditional security spend has been focused on external threats is that they are both easier to spot and easier to defeat,” says Geoff Webb, senior manager of product marketing at NetIQ (www.netiq.com). “Insider attacks

“Insider attacks originate, in many cases, with the very people who are tasked with keeping the information technology working. As such, [insider threats] are orders of magnitude more difficult to spot and prevent.”

- NetIQ’s Geoff Webb

originate, in many cases, with the very people who are tasked with keeping the information technology working. As such, [insider threats] are orders of magnitude more difficult to spot and prevent.”

**High-Risk Zones**

Although enterprises in nearly every industry are susceptible to insider data theft, some are naturally more prone to this danger than others. According to Torsten George, vice president of worldwide marketing for ActivIdentity (www.actividentity.com), any organization that is in highly competitive markets or that produces valuable intellectual property can face a higher insider threat level.

“For instance, aerospace and defense companies are at high stake, considering the type of products and services that are being provided in this industry,” George says. “As a result, many of these organizations are innovators in implementing strong authentication and credential-management systems in their organizations to protect against data leakage and internal identity fraud. Furthermore, public companies are more likely [to be] targeted by employees compared to private companies.”

NetIQ’s Webb adds that the healthcare industry is also ramping up efforts to protect against all data theft, including the internal variety. In fact, he says that this area could serve as the next big frontier of data security challenges, particularly as organizations encounter increased pressure from regulatory bodies. And beyond the penalties tied to breaches, he stresses that running a medical practice with a reputation for losing patient

records doesn’t exactly reflect a winning business plan.

**It’s Not Rocket Science**

Whereas hackers have built sophisticated tools to infiltrate networks, thieves already inside an organization can employ almost laughably simple methods to steal data. Webb says that the most common method employees use to steal information is also the least technical method—they walk out the door with some papers under their arm or in a bag. Data can also be placed effortlessly on CDs, DVDs, or USB key drives, and sometimes that theft can occur without much forethought, especially if the employee regularly backs up data stored on a company laptop to optical or other media. Experts also identify email as a method for stealing internal data, but Webb says this practice is becoming less common due to the increased awareness of email data loss-prevention filters.

Inside thieves can access data in other ways, as well. ActivIdentity’s George points to business applications (internal and hosted) and intranets as a common repository for competitive information, pricing, RFP guidelines, and other sensitive data. Many organizations put themselves at risk

by using only username and password authentication for these areas instead of implementing a role-based access control system.

“As a result, all the sensitive data is accessible to their employees,” George says. “If an employee means harm to their employer, protecting the access to this data becomes crucial. This becomes even more important when thinking about the current business climate with daily mass layoffs. If an organization does not find cost-effective and efficient ways to streamline the decommissioning of user credentials, disgruntled ex-employees can continue to gain access to sensitive data by using their old username and password.”

**Who Needs What?**

Because it can be difficult to identify precisely who might be stealing data—Webb says that insider attacks often originate among IT personnel themselves—defeating insider threats requires a much different approach than what’s required for external threats. Although technology can help, managers must adopt policies that ensure employees have only the minimum necessary access to data required to do their jobs.

“One of the first things an enterprise can do is to limit the group of employees who can access sensitive data,” says John Mutch, CEO of Symark (www.symark.com). “Only those employees who need such access should be given explicit access to it.”

According to Webb, many organizations lag behind in defining which employees should have access to what data and how they should access it. Once they take that

Key Points

- Public companies, as well as companies in the defense, aerospace, and healthcare sectors, face a rising risk of insider data theft.
- Keeping insider theft at bay is difficult due to its simplicity—a CD, USB drive, or even a stack of papers can be carted off with ease.
- The key to preventing employee (or ex-employee) theft lies in policy. Organizations must determine who requires access to sensitive data and subsequently deploy the proper controls to allow or disallow access.

step, however, it becomes easier to determine how to limit access by using technologies that limit the level of user privilege according to predefined policies. George also recommends deploying a versatile authentication system that includes multiple authentication methods (for instance, knowledge-based, adaptive, or out-of-band), as this can extend traditional endpoint security systems by providing role-based access control with the push of a button.

In addition, Mutch advises that organizations accordingly lock down USB ports and Internet protocols to reduce malicious transfer of data, as well as deploy controls that define how data can be copied and transmitted and how devices that store that data should function. From here, the focus should move to proactively monitoring user activity and to gather and review log files that show activity over time, Webb says.

“One of the most interesting facts about insider attacks is that they were almost always visible before the event—had someone been looking in the right place with the right tools,” Webb says. “Insiders will often conduct what are called ‘stepping stone’ attacks before they do anything serious. These attacks are designed to test security response without necessarily doing anything too serious. If they attack repeatedly and get away with these smaller attacks, they will escalate the attacks until they get what they want. It’s rather like dipping your toe in the water to test the temperature. However, if the security team has the right tools in place, and the time to use them, then these smaller test attacks can provide a vital early warning sign of an impending attack.”

**Take A Personal Approach**

Employee theft is a symptom. So says Laurent Duperval, president of Duperval Consulting, who notes that employees often gradually evolve into thieves as they become increasingly upset at their employers or supervisors and see theft as a revenge tactic. Or, perhaps, the insider theft could be a symptom of financial trouble at home. In either case, Duperval recommends managers use the following human-based approaches to prevent insider theft.

**Look at behavioral patterns.** “Don’t just look at behavioral patterns of employees, but of the company as a whole. Is it ethical in all of its dealings with clients? Is it honest with their clients and their employees? If not, that’s a recipe for theft in the workplace.”

**Take personal interest in your employees.** “By having a talk periodically with your employees on matters other than business, it builds a bond. It is much more difficult to steal from someone you care for or who cares for you than it is to steal anonymously.”

**Create a healthy culture.** “If the corporate culture is one of integrity and honesty, dishonest individuals will have a difficult time living there. In such a culture, all employees look after the better interests of the company, instead of looking out for themselves only.”



# “Over Ethernet” Technology Update

## One Cable, Multiple Uses, Major Business Benefits

by Carmi Levy

CONTINUING ECONOMIC TURMOIL is prompting enterprises in all sectors to look twice at the two key “over Ethernet” technologies, Power over Ethernet and Video over Ethernet, as they work to simplify their technology environment and save some money in the process.

“Reduced total cost of ownership (TCO) is probably one of the single biggest reasons that Power over Ethernet has become so popular,” says Philip Jopa, chief technology officer of Allied Telesis (www.alliedtelesyn.com). “Everybody’s jumping on the bandwagon because it makes it easier to save power over the life of your equipment and to have a simpler technology environment, as well.”

### Ditching The Rat’s Nest Of Wires

Power over Ethernet delivers both power and data through common twisted-pair cabling. By extending infrastructure typically used exclusively for data, organizations reduce the size and complexity of their cabling network. Client-end device configuration is also simplified, as only one cable needs to be drawn to devices that formerly required two. Rick Bentley, CEO of Connexed Technologies (www.connexed.com), says this returns a number of critical benefits.

“It leaves you with one less plug to get unplugged,” he says. “If a security camera or other device loses power because someone unplugged it to plug in a vacuum cleaner, you have a service outage to deal with that could have been prevented with PoE.”

Bentley says PoE allows IT to centralize its power environment and maximize the amount of equipment running off of a UPS.

“It lets you keep mission-critical systems up even in the event of a power outage,” he

says. “It’s also much cheaper, faster, and easier than home-running a second cable for power.”

### The New Video Frontier

Video over Ethernet fits hand-in-hand with Power over Ethernet. Exploding demand for video capability is driving growth as companies run headlong into the limitations of conventional networking technologies. Widen Enterprises CEO Matthew Gonnering (www.widen.com) says video is increasingly becoming a primary means of corporate messaging. But exploding file sizes are causing significant headaches for IT.

“The U.S. Internet Industry Association (USIIA) estimates that video downloading and streaming currently accounts for 50 to 60% of all worldwide bandwidth traffic,” Gonnering says. “This could eventually grow to 80 to 90%. Within the average organization, skyrocketing demand and use of video for online promotions is not supported by internal IT resources.”

Cost is also becoming a significant limiting factor.

Key Points

- Power over Ethernet streamlines infrastructure management and results in a simplified cabling environment.
- PoE switches allow devices to be remotely and automatically powered down during low-demand periods to save energy.
- Video over Ethernet can reduce costs and open up remote video solutions to companies with smaller budgets and IT capabilities.

power the cameras—just a PoE switch,” Isaac adds. “It’s beautiful.”

### A Greener Alternative

Other PoE- and VoE-friendly applications cited by Isaac include enterprise Wi-Fi, outdoor wireless broadband, and embedded computing. Even if new apps aren’t on a given company’s horizon, energy savings almost always are.

You can be more intelligent about how much power your devices actually draw,” Jopa says. “We’re seeing a tremendous trend toward green products, and an

“You can be more intelligent about how much power your devices actually draw. We’re seeing a tremendous trend toward green products, and an efficient, managed PoE switch gives you the granularity of control that can drive significant savings over the life of the device.”

- Wlanmall.com and Continental Computers’ Ronen Isaac

“If you look at all the services that have traditionally been used for video transport, they have either been bandwidth-limited or hugely expensive,” says Roopa Shree, senior industry analyst with Frost & Sullivan’s Information Communication Technologies practice. “But the cost of implementing Ethernet—which has established itself well in the LAN and increasingly the WAN space—is very low. And it’s also IP-based, which makes it very easy to integrate all forms of data.”

National- and global-scale organizations with far-flung regional offices and teleworkers are fuelling videoconferencing’s growth. Vertical sectors such as education especially benefit from PoE and VoE because the low cost of implementation fits their often-constrained IT budgets. Shree says government departments are also rapidly taking up video. In all cases, the savings can be significant.

“Traditional CCTV requires running special cable, having special 12V or 24V power supplies, and having specialized hardware to terminate and encode the video,” says Ronen Isaac, VP of Wlanmall.com and Continental Computers (www.continentalcomputers.com). “This is in essence clumsy. PoE allows us to install an 802.3af switch and run one cable for power and data.

“If the install has a lot of cameras, this means a quicker, less expensive installation and no more ugly power supply boxes to

efficient managed PoE switch gives you the granularity of control that can drive significant savings over the life of the device.”

Data centers can benefit, too, as PoE is increasingly incorporated directly into environmental-control devices.

Aaron Smith, chief technical officer at Proliphix (www.proliphix.com), says PoE can solve a number of longstanding power problems in the data center—and drive energy savings in the process.

“Due to the wide variance of installed HVAC systems, finding a power source can be a challenge,” Smith says. “Some HVAC systems provide 24VAC power to the thermostat, while some do not. Even when 24VAC power is supplied, the quality of the power can be suspect.”

PoE allows enterprises to retrofit existing HVAC systems with advanced monitoring to better control energy use. While up-front costs for higher-efficiency PoE devices may put off some buyers, Jopa says you get what you pay for. A PoE-enabled switch with an 80 to 85% efficiency rating at the power supply will have a significantly lower TCO than one with a 50% rating.

“If you calculate the power these devices use over their lifetime, you’ll realize that investing up-front pays off in the long run,” says Jopa. “It typically costs four to five times the acquisition cost to run it, manage it, upgrade it, and power it. Sharp buyers understand the TCO model, while others buy simply on price.” ■

## Study Finds Cloud Computing Best Suited For SMEs

One widely held belief of cloud computing is that companies can save money by running their applications in a third-party data center rather than building and operating their own data center. For small to midsized enterprises, those economic benefits of cloud computing exist. But for larger organizations, cloud computing can be more expensive than traditional data centers. Those are among the major findings of a study conducted by McKinsey & Co., a global management consulting firm.

The report, titled “Clearing The Air On Cloud Computing,” examines the true costs of running data centers in the cloud. As an example, the report says, the average cost for a CPU for a typical data center is \$45 per month. The equivalent cost of virtual cores on Amazon’s EC2 (Elastic Compute Cloud) averages \$70 to \$140 per month for Linux and \$100 to \$180 for Windows. “Cloud is at the stage of development I would call early childhood in its true ‘ready for prime time’ maturity, with lots of really thorny technical issues to yet be resolved,” says Bruce Taylor, symposium director and chief strategist for the Uptime Institute. “I think right at this moment, most of the early economic benefits will accrue to SMBs. That could be a very different story three to five years out,” Taylor says.

### More Useful

Although cloud computing is more useful for smaller companies with smaller jobs to perform, that doesn’t mean large enterprises should forego interest in cloud computing. The report suggests that larger enterprises could save 10 to 15% by migrating applications from Windows servers in the data center to Linux-powered cloud platforms. “Doing that now gains back data center capacity, cuts both CapEx and OpEx significantly and quickly, and obviates or postpones the need for a new data center indefinitely,” Taylor says.

The study further states that cloud computing makes sense for small to midsized enterprises because of the equivalent cost of virtual cores compared to physical cores in a data center. “Small-business owners who do not now operate from formal critical computer environments and operate now with widely dispersed office-level servers in closets and under desks certainly ought to quickly take advantage of the probable reliability improvement that moving applications to the cloud ought to represent,” Taylor says, adding that determining whether a company should utilize cloud computing platforms depends on a number of factors that vary among companies.

by Kris Glaser

## A Tale Of Two Standards

Power over Ethernet is a subset of the 802.3 Ethernet standard initially defined by the IEEE in 1983. The addition of power to the spec spawned the evolution of the following PoE standards:

**802.3af**—The original PoE standard, ratified in 2003, which supports up to 15W per port at a nominal voltage of 48V DC. Operates over CAT 3 and CAT 5/5e cabling.

**802.3at**—An updated standard, currently under discussion by the IEEE, that will increase the per-port power capacity to 30W over CAT 5 and higher cabling. When ratified, this new capability will support a wider range of more power-hungry devices. It is sometimes referred to as POE+.

Watch out for vendor-proprietary PoE-branded equipment that may not support either standard and result in interoperability issues.





### European Union To Mandate Breach Reporting

The European Commission is seeking to ensure that consumers are made aware when a business, agency, or organization in Europe loses its personal data. The EC’s mandate could be approved by the end of 2012. Most of the United States and Japan currently have similar laws on the books. In 2007, British mortgage lender Nationwide Building Society was fined \$1.5 million following the theft of a company laptop which contained personal data of millions of customers. Additionally, last year, the chief executive of the Deutsche Bahn national railroad in Germany resigned after it came to light that the firm viewed the personal banking details of 240,000 employees and never informed them. Currently, organizations in most European countries are not required to notify the public in the event of a data breach. Some organizations oppose the move, claiming that broader notification requirements would generate more bureaucracy and costs.

### AMD Restructures

AMD has finalized its 2006 acquisition of ATI Technologies by announcing a merger of its CPU and GPU divisions. The combined unit will help improve efforts to combine graphics and microprocessors onto a single piece of silicon, which AMD currently expects to debut sometime in 2011. Rick Bergman, formerly senior vice president of the graphics division, will head the new joint effort. AMD will also have three divisions in charge of technology research, marketing, and sales. Randy Allen, former senior vice president of the microprocessor group, has chosen to leave the company. AMD’s new business structure is also designed to help the company achieve profitability in the face of the economic downturn and stiff competition from microprocessor market leader Intel.

### France Approves Antipiracy Three-Strikes Bill

The French National Assembly passed a bill to reduce Web piracy and to prevent illegal file-sharing. French President Nicolas Sarkozy supported the three-strikes bill; penalties include a warning via email for the first offense, a warning via personal letter for the second offense, and authorized disconnection for the third offense. The lower house of the French Parliament passed the bill 296 to 233, a decision that contradicts the EU’s decision to prohibit governments from terminating citizens’ Internet access without a court order. Some commentators believe this controversial legislation will punish computer users who are victims of hackers, malware, and other suspicious activity. Other countries, including the United Kingdom, the United States, and Sweden, are developing their own legislation to fight piracy.

# Navigate The GSA Schedule Maze

## Tips For Buyers & Vendors

by William Van Winkle  
• • •

**THE GSA** (General Services Administration) controls about \$66 billion in annual procurement for all federal agencies. If you’re a company wanting to sell to the government, the GSA is the door through which you must enter. If you’re a government data center wanting to make purchases, again, the GSA is likely your best tool for the job. However, like any good tool, making proper use of it requires some skill and experience.

### Starting On Schedule

Before anything else, understand the GSA’s function. In a way, the organization is a price club for government agencies. It exists to get quality products and services for some 1,800 U.S. government agencies at reasonable prices. And like a price club, the doors close if the organization can’t move the goods, so it’s in the GSA’s best interests to make sure federal agencies get the best deals possible.

“We have an industrial funding fee that is tacked on to the pricing of the contracts,” says Michael O’Neill, deputy office director for IT Schedule Program, ITS/FAS GSA. “That’s the revenue that we use to fund the operations of our organization. If agencies don’t use our contracts, then the revenue doesn’t get created, so we don’t have money for the employees.”

A GSA schedule is a five-year, unfunded contract that specifies the pricing the federal

## GSA Regulations

Some big-name megastores have taken a lot of criticism for squeezing their vendors to death on pricing. According to GSA’s Michael O’Neill, regulations keep the GSA from doing the same. He notes, “When [this type of store] tries to push its vendors for a lower price, they have some leverage I don’t have. That’s ‘if you don’t give me this at a lower price, I’ll take my business elsewhere.’ I can’t say that. We’re mandated to spend the government’s money in a fair and equitable manner to obtain fair and reasonable prices and give everybody an opportunity to compete.”

government has agreed to pay for commercial goods and services. Funding for the schedule doesn’t materialize until an order gets signed by an agency. Any given schedule can be renewed up to three times, resulting in contracts lasting up to 20 years.

That said, a vendor shouldn’t expect that getting on a schedule immediately translates into five to 20 years of easy sales. Getting a schedule is merely the first step, the key that gets a vendor into the bazaar. O’Neill notes that the GSA multiple-award IT schedule alone has over 4,500 contractors. The contract is only one puzzle piece. It still falls to vendors to market and support aggressively and work to cultivate the interagency word-of-mouth referrals that can create business.

Some people believe that getting on a GSA schedule is a complex, nearly impossible affair. Like anything worth having, yes, it can take time and work. According to O’Neill, a carefully prepared application can yield a contract award in 100 days. But to help would-be vendors, the GSA offers a lot of assistance. The FAS (Federal Acquisition Service) branch of the GSA holds workshops for small enterprises to help get them on contract. There is a wealth of online help, including the Center for Acquisition Excellence training course (cae.gsa.gov), Webinars, and even a GSA staff of small business technical advisors to call when help is needed.

“I don’t recommend getting a schedule yourself,” says Robert J. Woods, president of Topside Consulting Group and a 29-year veteran of the federal IT community. He advises, “Hire somebody for \$10,000 or \$20,000 who knows what they’re doing. If you’re paying more than \$25,000, even for a complicated schedule, you’re probably overpaying.”

### From Schedule To Order

Despite decades of providing service to government agencies, some groups do not wish to purchase through GSA contracts. Woods and O’Neill agree that there can be many reasons for this, including a perceived fear about losing control of the procurement.

O’Neill notes that there are drawbacks to doing it yourself. “An agency [that] did it themselves might typically go under some sort of competitive requirements in accordance with the FAS,” he says, “and it would take them anywhere from 150 to 300 days to put a competitive requirement on

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## Key Points

- In a sense, the GSA functions as a price club for government agencies. The GSA schedule is a contract that specifies what prices agencies (the “club members”) can pay for goods and services.
- Many educational tools exist, particularly online, to help vendors learn about the GSA and how to get on a schedule. For those who don’t want to invest the learning time in this process, a hired consultant may be beneficial in obtaining a contract.
- GSA schedule prices are subject to change with proper approval. This is to help protect vendors and taxpayers alike and assure fairness on both sides of the transaction.

the street, receive bids, do the analysis, and make a decision on who’s going to provide the contract’s goods and services. With our contracts, though, if they wanted a computer ASAP, they could use one of our e-tools, get the bid out there, make an award, and have the computer in three days. That’s why we’re the preferred source.”

Federal rules demand that all agencies, whether purchasing through a GSA schedule or not, make a demonstrable effort to gather at least three competitive bids for any planned goods or services order, the final decision being based on overall value. Moreover, the pricing agreed on when the contract was made isn’t necessarily written in stone. If costs escalate, final prices can reflect that. Conversely, vendors can provide discounts when bidding as part of the competitive process. In 2008, the GSA processed more than 25,000 contract modifications in order to add new products, change prices, and so on.

For government agencies, placing the order is the easy part. Developing the order from early needs assessment through long weeks or months of information gathering and analysis can be the true challenge.

Eighty percent of GSA contracts go to small companies, so don’t think that size always determines the competitive outcome. Remember that overall value within the GSA schedule’s context is the final yardstick. And keep in mind that value continues to be a key factor after orders are made.

“Don’t overpromise,” cautions the GSA’s O’Neill. “When you do, it becomes a very difficult hole to get out of.” **P**

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# Develop A Data Center Strategy & Architecture

## A Plan Makes For Efficient Growth

by Jean Thilmany

SOMETIMES DATA CENTER and IT managers take a haphazard approach to creating a data center strategy and architecture, which can result in a mess when acquisitions or other major enterprise changes need to take place.

The key to avoiding the mess, experts say, is a sound data center and architecture strategy that can see enterprises through growth, downturn, acquisition, and unforeseen events.

At MetLife, IT managers regularly meet with corporate real estate and facilities managers to gauge current capacity needs and project future needs. Representatives from various departments come to these meetings to talk about future IT needs, says Joe Perillo, vice president of enterprise infrastructure technology operations at MetLife. "People from the departments help us know what needs to be added," Perillo says.

### Staying Current

MetLife maintains two data centers, each between about 35,000 and 50,000 square feet, Perillo says. But like any good enterprise, data center, and architecture plan, it allows for flexibility while emphasizing the need to remain up-to-date on hardware installation, he adds.

The MetLife data center plan is, above all, flexible. It allows for future growth and acquisition, takes advantage of the latest hardware and software developments, and attempts to lower power and cooling costs through future design improvements and hardware upgrades, Perillo says. "By staying on current-generation hardware, you can take advantage of many software enhancements like virtualization," he says.

Because hardware is continually improved from a power perspective, remaining on top of hardware advancement is key to maintaining or improving power and cooling costs, he adds. "Your frame utilization goes up quite a bit when you're virtualized," he says.

### Must-Haves

Ensure your data center plans call for built-in redundancy and can meet power needs, now and in the future, says Bill Peldzus, vice president of data services at GlassHouse (www.glasshouse.com), which manages data center migration. "Customers who take redundancy seriously are the ones who have been impacted by power outages in the past,"

Peldzus says. "They know how important it is. With dual generators or a redundant data center, you can lose any major component and still be up and running and functional."

MetLife ensures power can be quickly expanded for all its data center operations, Perillo says. MetLife maintains its data centers in a bay configuration, with five equipment bays of 5,000 to 10,000 square feet for each data center. The bays management method lets staff increase watts per square foot to stay ahead of power needs. "We've built an expandable environment around our power infrastructure, where we can add USB modules as needed to increase our watts per square foot to each bay," he says.

### In These Times

Of course the economic climate must figure into the data center strategy, says Joseph Lauro, senior associate at design, planning, and consulting firm Gensler, where data center clients have of late been emphasizing power savings over real estate when designing data centers, he says. "Most enterprises used to define a data center need, then employ some kind of planning process," he says. "Now people are realizing that real estate isn't the biggest cost driver, the quantity of power used for the space is, and how much space they actually need is part of the planning process," Lauro adds.

To that end, Lauro calls for even tighter integration among planning engineers, facilities managers, and IT. Together, members of the group can identify an enterprise's actual data center needs and plan a growth strategy. "Usually you'll see a divorce between actual needs usage and what someone might want to plan for, but in this economy, an enterprise can't really support that," Lauro says.

### Plan To Grow

Even in an economic downturn, enterprises need to factor acquisition and growth into a data center plan, says Rob Grapes, chief technologist at security provider Cloakware (www.cloakware.com). He notes that acquiring a company and its data centers can throw a wrench into the type of planning the data center strategy is meant to encompass.

When an enterprise acquires an outside data center, options include trying to integrate the centers, move operations to one center, or use the opportunity to investigate co-location or managed hosting. "If you're looking to outsource, getting bigger or acquiring another company gives you the opportunity to redefine your architecture and your plan around colocation," Grapes says.

## Key Points

- The data center should use power efficiently yet be able to quickly scale up power use in the event of acquisition or growth.
- A strategy should consider how the enterprise will embrace data centers maintained by newly acquired companies.
- Facilities managers, architects and engineers, IT personnel, and departmental representatives must be included in strategy-setting meetings.

When it comes to acquisition, a fourth, often overlooked, option also exists, he says. He gives the example of a large bank his company worked with. The bank acquired 13 smaller banks over a five-year span. "They walked into each new acquisition and compared the systems to be acquired with [their] own system to determine best of breed," Grapes says. "They were willing to destroy their own internal systems in favor of technology in [the] acquired company."

Though many companies may not have the stomach for that kind of data center strategy, it is an effective one, Grapes adds. "This allowed them to take the best of what was out there and apply it across their entire enterprise," he says. "Of course, they had to have a structured process in place and skill set to be able to do this," he adds.

### Compliance & Security

As ever, don't forget to account for security and regulatory compliance needs. These will vary by industry, Grapes says. Failing to plan for security measures will overcomplicate the security environment; create additional administrative frameworks; and introduce gaps in the protection of the data center, its applications, and ultimately the data, Grapes adds.

Like security needs, regulatory compliance measures will vary by industry. Still, there is a great deal of commonality between the specifications across industries, Grapes says. "If you work to gain compliance with HIPAA, you will have completed much of the same efforts as to gain compliance with SOX and PCI, so why repeat efforts on each?" he says. Instead, strategic data center plans should look for savings by consolidating regulatory compliance efforts.

One thing is certain: With an effective data center and architectural strategy in place, an enterprise can be set to both grow its data center and to face economic difficulties and changing industry standards, Grapes says. ■

## Sprint Posts Net Loss, Prepaid Customer Increase

Overland Park, Kan.-based Sprint Nextel lost \$594 million, or 21 cents per share, in the first three months of this year. Sprint continues to lose annual contract subscribers, but the number of prepaid customers increased. In January, Sprint announced its plans to cut 8,000 more jobs (14% of its workforce); the recorded severance and other costs were \$327 million. Overall revenue declined 12% to \$8.21 billion. In the first quarter, Sprint lost 182,000 subscribers, a better outlook than the 1.3 million customers lost during the previous quarter.

## Satyam Closer To Buyout

Tech Mahindra's \$422 million proposed buy-out of Indian outsourcer Satyam has been approved by Germany's BundesKartellamt, or Federal Cartels Office. The United States and other markets now must give close regulatory approval to the deal to acquire a 51% stake in the company. The approval is seen by many as a formality. Tech Mahindra executives announced plans to run Satyam as a standalone enterprise managed by its current leadership. Some of the issues still up for debate include integration plans, potentially cutting the 50,000-employee head count, and facilities consolidation.

## Mobile Revenues Hold Steady

Mobile operators are seeing lower ARPU (average revenue per user), but smartphones and mobile data usage are picking up the slack, according to a recent report from ABI Research. ABI's study shows that global ARPU dipped between 5% and 15% in the fourth quarter of last year. An increase in smartphone and mobile data plan sales helped maintain the ARPU in North America. Revenue from mobile Internet is one of the fastest growing segments, according to ABI, up between 15% and 25% over last year. ABI also reported that end-user voice traffic grew between 2 and 10%.



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## Study: H-1B Visas, Outsourcing Impact IT Wages

According to a study by professors from New York University and the University of Pennsylvania, professionals in the IT sector are feeling the short-run financial consequences of H-1B visa use and outsourcing. Researchers found that wages have decreased as much as 6% for computer programmers, system analysts, and software engineers. Additionally, IT management earnings have decreased by 2 to 3% because of outsourcing.

Prasanna Tambe, assistant professor of information, operations, and management sciences at NYU's Stern School of Business, and Lorin Hitt, professor of operations and information management at The Wharton School, accessed tens of thousands of résumés and combined the data with government resources to determine results about company wages. Overall, they found that both H-1B admissions and offshore outsourcing are reducing domestic wages.

### Impact Difficult To Verify

The impact of H-1B workers on the domestic workforce is difficult to verify in the current global economy. Howard Kiewe, senior research analyst at Info-Tech Research Group, says it's likely that some stateside jobs have been displaced by offshore outsourcing as a negative consequence of globalization. Even so, it's evident that there have been undeniable benefits to the globalization of the foreign workforce.

"A major portion of technology startups are founded by foreign-born workers, producing \$52 billion in annual sales during 2005, according to a Duke University study," Kiewe says. "This, combined with greater demand for U.S. products in developing countries, provides a net positive impact on both domestic and foreign economies."

Outsourcing will continue to propel the technology field on a macro level, whether or not H-1B admissions impact the economic forecast. Kiewe says, "Businesses will always look for more cost-effective methods to produce their products, and technological advances have provided an opportunity to do so through offshoring."

"Asking businesses not [to] exploit these opportunities out of a sense of duty or fair play is about as realistic as asking water not to flow downhill," says Kiewe. "SMBs will increasingly pursue the benefits of offshore sourcing, especially as the economy recovers and they have the resources to invest." This is the juncture at which H-1B visa-holders can aid the U.S. competition for jobs around the world.

Kiewe also states that job security for American citizens and green card holders lies in their ability to do something their employer cannot find elsewhere for less. In general, "focusing on marketable skills is the only realistic way to ensure prosperity," Kiewe says.

by Joanna Safford



# Keep Tabs On Personnel & Equipment

## RFID Technology Brings Life To Asset Tracking

by Curt Harler

**HIDE-AND-SEEK IS A FUN GAME**, unless you are the IT manager in a large office complex trying to locate a certain computer or server and can't find it for love or money.

That same IT manager might appreciate the advances in RFID (radio frequency identification) tracking—especially in active RFID. Many IT managers have found active RFID worth the added cost over a traditional passive bar code-enabled system. Although active RFID is more expensive than passive, it is far more powerful when it comes to locating resources, whether they are in a hospital, school campus, or data center.

An active RFID system installed in the data center at Clear Channel headquarters in San Antonio, Texas, provides between 95 and 98% resolution at the rack level. This is in a data center with about 1,000 racks. The system can provide information as granular as the location of a server within the rack and whether the equipment is, for example, Dell or HP. Almost all of the 3% of discovery mistakes are errors of one rack to the left or to the right.

With a passive bar code system, Clear Channel was able to get about 80% resolution on its data center resources. The process took eight people about four weeks to do an audit, which had to be done twice yearly.

### RFID vs. Wi-Fi

For decades, the "radio frequency" part of the RFID name has been used loosely. "It is not really radio but magnetic waves that RFID has used," says Bob Scher, CEO of Dynasys (www.dyna-sys.com). Recently, true radio has become more a part of RFID technology as the wavelengths get shorter.

Some RFID operates at low-frequency 130KHz—a wavelength of more than a mile for a reader that is perhaps a few inches from the tag. With high-frequency, passive 13MHz systems, the wavelength is 66 feet, but that still is a long wave to read something only a foot or two away. At 900MHz, the wavelength is 12 inches, and because the distance is 3 or 4 feet, the system actually is reading a couple of true radio waves.

Wi-Fi operates in the 2.45GHz area. When choosing between RFID and Wi-Fi, it is important to know whether you are trying to read single transmissions, such as at an office entrance where people come in one at a time; or many simultaneous transmissions, such as at a busy loading dock (requiring anticollision technology).

One advantage of RFID technology over Wi-Fi is that RFID can be deployed in FCC-licensed bands.

"Installation is no more complex than a Wi-Fi installation," says Mitch Medford, CEO of RF Code (www.rfcode.com). "Anyone with a normal IT background can do it."

"Active systems eliminate walking around looking for things," says Mitch Medford, CEO of RF Code of Austin, Texas (www.rfcode.com). Some RFID devices not only provide RFID location of equipment but also can sense temperature; temperature and humidity; or dry contact, such as a smoke detector or halon device. Similar units act as wireless door switches, sensing whether a door is open or closed.

Whether it is monitoring highly perishable drugs in refrigeration units or tracking data center assets, active RFID allows an SME to stay on top of inventory.

### Active vs. Passive

Should an SME look at active or passive systems? "The market now is very disjointed," says Bob Scher, CEO of Dynasys (www.dyna-sys.com). The place to start, he suggests, is with the reading distance required.

"Active typically will give more detection distance than passive," he says. And active typically is more expensive—but not always.

**Some RFID devices not only provide RFID location of equipment but also can sense temperature; temperature and humidity; or dry contact, such as a smoke detector or halon device. Similar units act as wireless door switches, sensing whether a door is open or closed.**

"Look at the balance between the number of tags and the number of readers," Scher says. A distribution center might have a million products coming off the dock but need only one reader at the dock door. Passive will be cheaper. However, where the situation is more complex or fluid and the number of readers required is higher, active comes to the forefront. This is because passive readers have to energize the tag, and that adds to the number of units required.

Scher says active tags are ideal to track the location of physical assets such as cage racks, medical equipment, and personnel.

Active tags have an internal power source that passive tags do not. Because active readers typically do not transmit but only receive, their power consumption, Medford says, is 600 million times less than that of a standard cell phone.

There are two basic kinds of active transmitter, Scher explains: beacon mode and activator mode.

Beacon mode sends its ID at a predetermined interval—say, once every half-second or every 10 seconds. This is perfect for monitoring school buses in a parking lot. Each bus tag sends its ID, and because there is little movement, the beacon rate can be set slow and there will be few data collisions.

Key Points

- Active RFID is more expensive than passive but far more powerful.
- Blending RFID with other technologies, such as infrared, makes for a powerful combination.
- RFID technology can be deployed in FCC-licensed bands.

Activator mode wakes a tag that is dormant. "You don't want a tag beeping all day," Scher notes, adding that fewer squawks saves battery life. However, when the bus comes to the exit gate, the system needs to track it as leaving or returning.

RFID units also provide a measure of physical security in the data center. If that is not enough, tamper-detecting tags are available for assets such as laptops. The unit simply beacons over and over and over—until it is captured.

### Healthy Solution

Blending RFID with other technologies, such as IR (infrared), makes for a powerful combination. The concept is simple: In the example of the hospital's cart, the card has

an active IR transmitter that beams to the nearest RFID reader. This allows anyone seeking the device to locate it down to the room level.

Whatever the user's business, the technical requirements do not go much beyond having a person to slap tags on devices, a PC to run the software, and someone to install the readers.

Typically, the active RFID tags are designed to last the life of the asset being tagged and for disposal with the asset. Those with special functions—such as temperature or humidity monitoring—have a three-year life expectancy. They come with a coin-sized lithium battery that is easy to replace.

Whatever the application, the user getting started with RFID should run a pilot project. Crunch the numbers. Although active RFID is more expensive than passive at purchase, Medford says that over the long run of its five- to seven-year battery life, active RFID is more economical. A typical active tag in a health center medical application will be reused 200 times. A bar code sticker can be used only once. With an active system, the device constantly emits its code, practically begging the reader to discover it.

Although that might take some of the fun out of a game of hide-and-seek, it certainly makes life easier on managers tracking assets. [E]



THREE QUESTIONS

# Improving Your Physical Infrastructure

## Snake Tray Reduces The Cost & Time It Takes To Wrangle Cables & Manage Airflow

by Daniel P. Dern

WHETHER IT’S PART of new construction or to reflect moves, additions, or changes to data center gear, IT needs to be able to install and modify the associated power and data cabling, ensure that there’s adequate airflow for cooling, and do it all quickly and cost-effectively.

Located in Bay Shore, N.Y., Snake Tray (800/308-6788; [www.snaketray.com](http://www.snaketray.com)) provides cable and wire management and power distribution solutions, airflow management products, and related services. Roger Jette is the company’s president and founder.

■ What are the biggest IT-related issues facing today’s small to midsized enterprise?

“One of the issues I think of is in regard to things that could break and, in the process, take down the company—make a company unable to keep doing business,” says Jette. Additionally, Jette points out that tasks that take too long or cost too much can impede an SME’s ability to change or expand IT equipment.

Cable management relates to these issues, says Jette, because “SMBs need a bullet-proof enterprise—an infrastructure that’s scalable and deployable quickly. Speedy response is the lifeblood of an SMB; they

don’t have the luxury of doing things slowly. And while a company’s power, cabling, and air infrastructures may not be the most important aspects, without them, you can’t do anything.”

Plus, Jette says, SMEs are less likely to have the in-house staff expertise for cable management, so a good infrastructure is even more important.

Being able to deploy and change infrastructure is only part of the challenge, Jette adds. “You have to also stay code-compliant. If you start violating building and electrical codes, you grind to a halt.”

Efficient airflow solutions are also increasingly important, Jette says. “Keeping the air-

flow properly managed lowers utility costs and also reduces a site’s carbon footprint.”

■ What should *Processor* readers know about your company’s products?

Snake Tray’s solutions simplify installation and additions, moves, and changes for power and data wiring; reduce labor and material costs and the installation times to install and manage cables throughout a facility, including distribution of power above ceilings and under access floors; and help direct proper airflow in data centers.

Snake Tray’s products can be found everywhere in offices, data centers, plant locations, and other sites around the world. Some of its

and under-floor versions); Snake Canyon, a fast-to-install modular cable tray system for access floors; and Snake Bus, a modular power distribution system for distributing power. “Our bendable Snake Tray system lowers the capital cost of an IT system but keeps everything code-compliant,” says Jette. “It’s important to have an infrastructure for the cables to transit . . . but you don’t want to have to spend a lot of money and labor and materials to install this.”

According to Jette, the company’s products avoid the need to mount hardware, eliminating time-consuming tasks such as wire cutting and dramatically reducing contractor installation time compared to traditional cable tray, wire-mesh basket, ladder rack, J-hook, and conduit solutions.

Snake Tray also provides custom solutions such as security-enhanced locking floor boxes and custom-modified cable management systems.

■ What makes your company unique?

“We put a primary emphasis on things you can’t find on a materials balance sheet or a P&L sheet [and] that have a high level of innovation so that savings to the customer is exponential rather than incremental,” says Jette. “For example, the bendable Snake Tray product lets a company create a 90-degree turn in 10 seconds, as opposed to the 30 minutes it would take to fabricate it with other ap-proaches. Our bus system uses 25% less copper to distribute power under access floors than traditional wiring methods.”

Additionally, Snake Tray is constantly at work developing new products, Jette says. “Last year, we put at least 10 new products out.”



products include its flagship Snake Tray hand-bendable cable tray systems; the Mega Snake high-capacity cable tray (in overhead



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BOOK REVIEW

# Brush Up On Your Numbers

## Book Provides Financial Intelligence For IT Professionals

by Kurt Marko

AS IT BECOMES A strategic corporate asset and not merely a cost center, successful IT managers will need to understand and speak the language of business, acquiring what authors Karen Berman and Joe Knight term financial intelligence. In their recent book, “Financial Intelligence For IT Professionals” (part of a series of similar titles targeted at various corporate disciplines), the authors outline the basics of corporate financial statements while illustrating how IT departments affect the numbers.

### Art Of Financial Reporting

Before diving into the accounting details, the book provides some intriguing insights into the “art” of financial reporting, which they describe as “using limited data to come as close as possible to an accurate description of how well a company is performing.” The authors contend that the need to make judgment calls with huge monetary ramifications can create a slippery slope to fraud and abuse.

Having exploded the myth of accounting as exact science, the authors dive into the

foundations of financial reporting. Anyone who has perused a company’s 10-K investment reports will be familiar with the terminology (income statement, balance sheet, and cash flow statement), but their elements, organization, and structure are mysterious to those without financial intelligence.

Reading a 300-page book won’t turn IT managers into accountants, but it does provide a comprehensive road map for navigating financial statements, seeing the interrelationships between constituent parts, and understanding the most important items. The authors particularly stress the importance of cash flow analysis (“cash is king”), noting its popularity with investment mavens such as Warren Buffett.

The book then explores methods of financial analysis. As the authors summarize, “The eyes may or may not be a window into

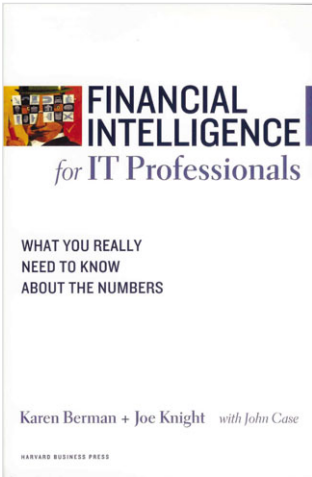
the soul, as Immanuel Kant suggested, but ratios are definitely a window into a company’s financial statements.” The authors run down the litany of essential financial ratios, including margin percentages, return on assets, debt-to-equity, current ratio, and inventory turns, carefully explaining how each is calculated and their interrelationships and business significance.

Before closing with an exhortation on the importance of financial intelligence in today’s enterprise and some tactics for improving a company’s financial literacy, the authors provide an excellent outline of ROI. They explain the three main calculations methods—payback period, net present value method, and internal rate of return—along with the strengths, weaknesses, and biases of each.

### Thorough Primer

“Financial Intelligence” provides a thorough primer on financial reporting, terminology, and analysis, with an eye to IT’s effect on a company’s financial results. While readers mastering this material won’t soon be confused with CPAs, neither will they be flummoxed or embarrassed the next time a business colleague throws around arcane acronyms such as COGS, ROE, or DSO.

The authors assert that where IT was formerly constrained to purely technical



“Financial Intelligence For IT Professionals: What You Really Need To Know About The Numbers”

Authors: Karen Berman and Joe Knight, with John Case  
Publisher: Harvard Business School Press  
Price: \$24.95 (list)  
Format: Paperback, 320 pages

affairs, it’s now being asked to play a strategic role in business decisions and initiatives, with a concomitant increase in influence and rewards. “But,” the authors say, “if this trend is to continue, IT professionals must equip themselves with the skills and knowledge they need to be true partners in the business. Financial intelligence is a critical dimension of these skills.”

## KEY CONCEPTS

- ▶ A company’s financial reports are the metrics of its success. Everyone in a company does better when they understand how financial success is measured and how their jobs affect financial performance.
- ▶ Because IT has become increasingly strategic to the business, IT professionals need to understand financial reports.
- ▶ While the foundation of financial intelligence is a standard set of statements and reports, finance and accounting are both art and science. The artful aspects of finance attempt to quantify and estimate things not easily quantifiable using various rules and assumptions.
- ▶ Analyzing financial statements requires going beyond the basic numbers by calculating ratios and relationships.
- ▶ Financial results must be understood in the larger economic and business climate within which a company operates. The numbers don’t tell the entire story but can indicate trends and provide insights leading to better decisions.

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OPINIONS

INFO-TECH • INSIGHT

# To Ensure Value, Get The Requirements Right

An appropriate description of requirements is essential to the successful deployment of a new application function, whether purchased or developed. Too often, we get the requirements wrong, and as a result, we fail to satisfy our internal and external clients. We miss opportunities. We may continually rework existing systems because they don't really work well, wasting resources and delaying the availability of new business function. We may fail to select the best software package for the job. Or we may configure a package to reflect current practice rather than create improved processes. IT groups that have experienced any of these symptoms should take a sober look at their requirements-gathering process and smarten it up.

## The Human Factor

Good requirement descriptions depend on the ability of people to clearly describe what they need and want. That's where the challenge begins. First, the analyst assigned to gather the requirements typically has limited prior insight into the organizational requirements or opportunities. Therefore, they are dependent on obtaining and interpreting input from subject matter experts. The experts have day jobs and are generally reluctant to spend much in-depth time with any analyst. Their requirement descriptions tend to reflect current experience and the status quo.

Analysts who have a broad understanding of what types of solutions are possible

can get to the essence of the requirements most quickly and identify new opportunities. Smart organizations give their most innovative experts time to provide the analysts with good insight and feedback.

Additionally, all but the simplest systems have multiple stakeholders—some obvious, others less so, such as compliance, auditing, and risk management. Time pressures and scheduling difficulties can conspire to push some stakeholders out of mind. An assumption that their requirements overlap with those identified by the significant stakeholders can lead to unsatisfied needs, frustrated staff, and unnecessary reworking. One of the major contributors to poor requirements is overlooked stakeholders. The requirements of all parties must be identified and considered part of the application specification.

## Too Vague, Too Specific, Or Just Right

Organizations must pick a sweet spot in setting requirements. At one extreme, some select an application system without much requirements analysis. These organizations often discover that they are missing key capabilities in their new system. Customization or workaround typically follows, while in some cases the system is unusable. Or, if the solution exceeds the requirements, the organiza-

tion has possibly overpaid or may force its employees or clients to deal with a more complex system than necessary.

Conversely, some organizations invest an excessive amount of time in developing a list of requirements that is overly detailed. In many cases, the analyst is reluctant to classify a stated requirement as non-core for fear of making an incorrect judgment. These organizations may reject suitable solutions because they fail to address all requirements, even though they may adequately address the core requirements. Or they undertake customization of packaged software that is

selection but never confuse the assessment of how the competitors address the key requirements. Changes to existing systems are limited to addressing real needs.

## The Smart Requirements Process

An organization that is successful in assembling good requirements includes four key elements in its gathering process:

**Assign a knowledgeable and professional analyst.** A good analyst understands how to elicit requirements and has an understanding of not only the organization's current approaches but also what other organizations are doing.

**Allocate sufficient subject matter experts** (with emphasis on the most innovative thinkers) to provide a future-looking description.

**Collect the requirements of all areas potentially impacted by the application.** Everyone's requirements should be understood, not just the top dogs'.

**Distinguish between core and non-core requirements.**

The core requirements (the what) drive software selection or detailed specifications, not the less relevant ones (the how).

Organizations that fail to address these principles risk selecting, developing, or enhancing applications that will fall short of achieving the intended business objectives, wasting resources in the meantime. We have lived with poor requirements development for too long. Let's fix this. ■

Send your comments to [infotech@processor.com](mailto:infotech@processor.com)

## ANDY WOYZBUN

**AUTHOR** Andy Woyzbun has more than 35 years of experience in extending and supporting IT in government, consulting, computer services, financial services, and telecommunications. Before joining Info-Tech as lead analyst, Woyzbun spent more than 10 years as CIO with several organizations. Andy has an engineering degree and masters degrees in computer science and in business administration.



totally unnecessary and wasteful. In the case of modifications to existing application software, they over-invest in changes to address specifications that reflect preferences rather than needs. For new development, they constrain design options.

Successful organizations get it just right. The core requirements are accurately documented and are clearly distinguished from those that are non-core. Packaged software is short-listed on the basis of whether it meets the core requirements. The non-core requirements may assist in final package

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# PDU's Direct To You

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by Blaine Flamig

**PREMIUM POWER DISTRIBUTION** without the premium price. Such a notion may sound too good to be true in today's sagging economy, but such an approach is precisely the customer-oriented mission PDU's Direct ([www.pdusdirect.com](http://www.pdusdirect.com)) was built on and continues to operate by.

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Established in November 2008 at the outset of the economic downturn, PDU's Direct understands the financial, cost-cutting challenges now facing SMEs. That's why PDU's Direct is committed to supplying its customers with industry-standard, industrial-grade PDUs suitable for network and server environments at prices falling 10 to 20% below competitors' online prices. PDU's Direct's customer commitment extends

to the company's easy-to-use, uncluttered Web site, which makes locating the right PDU a quick, streamlined process without skimping on the pertinent product information customers require.

PDU's Direct's dedication to its customers is seen through its next-business day shipping policy; 100% satisfaction, 30-day money-back product guarantee; and ultra-convenient email and live chat technical support options. Whether the question or concern is in regard to a product, order, or application, PDU's Direct's chat support pairs customers with live operators who possess years of real-world PDU experience and knowledge. Customers can even request a chat transcript for reference following a chat session.

PDU's Direct power distribution units are constructed in steel-case enclosures, available in a variety of outlet and power-level configurations, and ship with a customer-selected power cord. Each switched PDU sold also includes the latest firmware from Server Technology and fully networked outlet management and power and environmental monitoring abilities. ■

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FEATURED COMPANY

Forrester Study Looks At Enterprise iPhone Deployment

The iPhone can be successfully deployed into enterprises for employee use, according to a recent study performed by Ted Schadler of Forrester Research. The study examined three companies that currently have several Apple devices in use, including Kraft Foods, Oracle, and Amylin Pharmaceuticals, and found that there are plenty of benefits to handing out iPhones to employees, including a happier, more productive workforce and lower support costs.

According to Forrester, about 2,000 employees of Kraft were using iPhones at the end of January, and more than 4,000 are expected to be using them by the end of this year. In January, Oracle had handed out 4,000 iPhones with plans to add more applications to those devices by the year's end, while Amylin had 150 employees using iPhones in February. Amylin expects that number to expand to 650 by the end of the year.



Some of the key benefits these companies cite include the opportunity to drive culture change, the development of collaboration and business applications, and cost savings on voice and data plans.

Bumps In The Road

This isn't to say that the process was perfect. The companies say that ActiveSync for calendars, VPN, and the lack of cut-and-paste capabilities proved to be hurdles they needed to overcome. With the introduction of version 3.0 of the iPhone OS, however, these problems should be eliminated or assuaged.

"iPhone 3.0 fixes many of the problems that enterprises have identified," says Schadler. "In particular, problems with iPhone 2.x software, such as the lack of an encrypted backup file, the inability to lock down features like the camera, and the password caching problems, have been fixed in iPhone 3.0. Once the 3.0 software is deployed, more firms will feel comfortable deploying iPhones."

Schadler says more companies could deploy the iPhone as the operating system continues to improve, but currently, the benefits still outweigh the concerns.

"It takes a brave firm to give iPhones to their employees today," he says. "But with the iPhone 3.0 software and better management tools coming from companies like Sybase, more firms will see that the benefits of a mobile Internet device that's tailor-made for Internet-delivered services and information applications outweigh the risks."

by Tessa Warner Breneman

Affordable Equipment

DMD Systems Recovery Provides High-Quality Components At Reasonable Prices

by Holly Dolezalek

DMD SYSTEMS RECOVERY'S NAME might be a little misleading. The company is not in the business of data or system recovery after a crash; instead, it buys excess computer equipment of all types from companies that no longer need it and refurbishes it for sale to companies that do.

DMD Systems Recovery (877/777-0651; www.dmdsystems.com) has been in the business of asset management since 1994. The privately owned company is based in Phoenix, and it stays small in an effort to maintain the one-on-one connection with customers that helps its business.

Inner Workings

DMD's asset management team buys the equipment—routers, switches, PCs, laptops, components, printer cartridges, or almost any piece of IT equipment. DMD often contracts with other companies to do the actual site pickup and packaging.

Once the equipment arrives at the Phoenix site, DMD employees take care of testing, refurbishing, packaging, and shipping the equipment to other companies that are in the market for it. They also conduct technical services, such as repairing motherboards, if need be. Most of the company's business comes from southern and southwestern states, such as Texas, New Mexico, Arizona, and California, although DMD's service area is nationwide.

One of the asset management services the company offers is data destruction, so companies that contract with DMD to remove excess equipment can also have the data removed from that equipment—whether it's hard drives, tape, or other memory—and destroyed. DMD is a member of NAID, the National Association of Information Destruction, so NAID certifies that the data DMD says is destroyed is actually unrecoverable. "We offer the full scale of asset management: deinstallation, physical removal, packaging, arranging transport, testing, and auditing for refurbishment and resale," says Cliffie McKay, director of operations for DMD. "But we also offer chain-of-custody reporting for data destruction, and we track the serial numbers of hard drives all the way back to original equipment."

DMD also sells some new equipment, but it only makes up about 5 to 10% of the company's stock. The rest is refurbished. "We're seeing a lot more people wanting

refurbished equipment rather than new, especially right now, because it's cheaper to repair than it is to buy," McKay says.

DMD gets it all: workstations, fax machines, storage, memory, monitors, power supplies, and more. Its business relies on those companies that need replacement parts or equipment but that aren't ready to upgrade to a new platform or software yet. The turnaround time for orders for equipment DMD has in stock is usually same-day, but even if the company has to source it, the equipment is usually on its way to the customer the next day.

What Companies Want

In the small to medium-sized enterprise market, McKay says that a lot of companies are looking for laptops, PCs, or other equipment end users need, while larger companies are often looking for network gear such as servers or routers or more specialized components such as motherboards or power supplies for individual computers. "Most of our customer base is companies that want to keep the same hardware but need to get motherboards or spare computers with the same components as the ones they already have," McKay says. DMD has in-house salespeople making cold calls or calls to regular customers that



are often in the market for refurbished equipment, but it also sells through resellers and BrokerBin.

DMD also does business through its Web site, where most of its stock is listed, but McKay says that only about 15 to 20% of DMD's business comes from online. And those sales actually come from other sites that point to DMD's site. Another 60% comes through BrokerBin.

The rest comes from repeat orders and cold calls. The company has an active database of a few thousand customers, 300 to 400 of which are regular buyers. "On the asset management side, we have about six monthly contracts where we go to their site monthly or every other month," McKay says. "We also have six or seven where we go once a year, but for most of our customers, it's a one-time pickup."

DMD also does a small amount of international business, although the mostly parts-based sales are not a main point of focus to the company. "We haven't pulled out of that business altogether, but we have limited the number of parts we have in stock," McKay explains. "We've moved more into higher-end systems and full systems there rather than the parts business."

The Market For Refurbished Equipment

The landscape has changed over the past year or so for DMD. For one thing, the competition has thinned out a little. "It's still competitive, but it's not as competitive

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- DMD Systems Recovery buys used equipment such as servers, storage, and networking gear and refurbishes it for resale.
- The company does business nationwide, as well as a small bit of international sales, and maintains a Web site for online sales.
- "We offer the full scale of asset management: deinstallation, physical removal, packaging, arranging transport, testing, and auditing for refurbishing and resale," says Cliffie McKay, director of operations for DMD.

as it was," McKay says. "There are a few companies that were just starting up earlier when the economy was still okay, and they aren't there anymore."

DMD's biggest challenge is making sure that both sides of the business stay healthy.

If too much equipment comes in, it drives down prices, and if too much goes out, it jeopardizes DMD's ability to deliver to customers that call for equipment. "We have to balance the equipment coming in and the equipment going out as much as possible," McKay says. "If we get too much built up, we manage that by looking for companies that want more gear and also want a discounted price for it."

Balancing the two is particularly difficult right now because the market has become a little more inconsistent with all the layoffs. "We've got a lot of customers who have excess equipment they want to get rid of because they've laid off part of their workforce," McKay says. "They don't know what they'll want in six or eight or 12 months, because who knows when the economy will pick up?"

DMD's Future

Almost every company has to be modest with its expansion plans in this economy, but DMD does want to add more cable modem termination systems (the equipment that is most often used to deliver high-speed Internet and Voice over IP services to cable subscribers) to its stock. The company is focusing more on higher-end systems, although it plans to keep providing the same types of equipment it always has.

It also plans to expand without getting big. McKay says that staying small keeps morale high and lets the company maintain relationships with customers in ways that it couldn't if it were much bigger. "We do want to expand so that we're set for the next 10 to 15 years," he says. "But we like being able to take on different kinds of projects and being able to work around customers' needs. The bigger companies don't focus so much on services or on repairing high-level equipment, but we do." ■



FEATURED COMPANY

# Tightening Up Power Management In The Data Center

## Cyber Switching’s Tools Can Lower Electricity Costs & Boost Efficiency

by Bruce Gain

DATA CENTERS ARE CONSTANTLY seeing changes, and in the midst of new systems and equipment replacements, making sure that the electrical system can meet the demands of the new equipment involves a lot more than just checking that there is enough available current to run 24/7. Equipment power needs ebb and flow, so that in some cases electricity can be wasted on idle servers while those running at full load don’t get the watts they need.

Using monitoring software to track electricity consumption can help a company see how its data center consumes power and possibly detect power distribution inefficiencies, but increasingly, a more comprehensive approach is required. Getting an in-depth analysis of how power is distributed to your data center equipment is where Cyber Switching (408/436-9830; [www.cyberswitching.com](http://www.cyberswitching.com)) enters the picture.

“Cyber Switching has seen a switch of focus from the delivery of 24/7 power to measuring how much power is being consumed and to an overall awareness that data centers must become more efficient,” says Kevin McCabe, director of software engineering for Cyber Switching.

“Cyber Switching is well-positioned to help data centers in both regards: Our current development efforts strive to increase plug-and-power density to the racks and to provide software tools that measure and manage the consumption of energy at a high resolution at various points in the power distribution chain. The combination of these hardware and software solutions will help data centers to solve capacity and, in some cases, budgeting limitations.”

Electricity costs have always been important, but they will likely become even more of an expense in the future. According to the U.S. Environmental Protection Agency, data centers’ power consumption is expected to double from 2006 to 2011 after the United States consumed 61 billion kilowatt-hours of power in 2006. All that power consumption means huge costs, but boosting electrical distribution efficiency can reduce the expense, McCabe says.

“Several Cyber Switching customers have been successful at obtaining PG&E rebates by demonstrating a baseline usage [and] then showing a decrease in the baseline consumption by managing the electrical usage using the Cyber Switching PDUs and the Enterprise Management Console (EMC).”

### Smart Power Monitoring

The main worry for data center managers at the end of the day still involves making sure that the IT infrastructure will always have the power it needs to run. But increasingly, that concern is just the starting point,

as admins begin to go way beyond just maintaining an adequate amount of watts so equipment can run.

“Not that reliable 24/7 power is not important—it is still job No. 1—but the need to collect and understand usage data for hundreds of PDUs is a fundamentally new problem, [a] space that didn’t exist a short time ago,” McCabe says.

Cyber Switching, for example, was the first firm to commercialize electrical current monitoring tools at the outlet level, McCabe says. “The EMC was designed with scalability and extensibility in mind,” McCabe says. “Being open-source and object-oriented, the EMC is designed to keep pace with the dynamic nature of the data center.”

Aggregating, analyzing, and improving power distribution efficiency is accomplished with Cyber Switching’s EMC software’s Virtual PDU. This tool enables hundreds of PDUs to be combined in a single virtual interface. PDUs are managed in a

PDUs [in one or several locations],” McCabe says. “The EMC itself implements live and historical reporting, as well as large-scale discovery and configuration of PDUs on the network.”

On a more macro scale, Cyber Switching’s tools are applicable beyond the data center and can extend to the electrical infrastructure of an entire building or campus. Among other things, this scalability can allow data center managers to reduce redundant power



loads from outside of the data center that might otherwise sap needed power for the server room.

### Smarter Tools

Cyber Switching’s development efforts involve improving its power distribution solutions to meet the needs of data centers “from both the IT and infrastructure perspective,” McCabe says. “We are working on both hardware and software solutions to solve data center issues regarding capacity and utilization. . . . Cyber Switching is architecting a new line of PDUs to deliver high plug and power densities that operate on three-phase power. The new architecture includes improvements in security and data acquisition.”

For its software products, McCabe says Cyber Switching is preparing the new version of its Enterprise Management Console. “In recognition of the increasing need to collect and present usage information from

### contact

**Cyber Switching**  
(408) 436-9830  
[www.cyberswitching.com](http://www.cyberswitching.com)

- Cyber Switching’s products help SMEs manage and monitor their power consumption, improving efficiency and cost containment.
- The company’s Enterprise Management Console platform enables hundreds of PDUs to be combined in a single virtual interface with its Virtual PDU.
- “Cyber Switching will continue to have an impact on data centers in the next two to three years by continuing its tradition of innovation,” says Kevin McCabe, Cyber Switching’s director of software engineering.

various PDUs in the data center, the EMC is architected as an open-source PHP Web-based application that is easily extensible and scalable,” McCabe says. “The EMC will have a modular interface to support multiple vendors’ PDUs. Extending the system is a matter of adding additional modules.”

A big question mark for many data center managers is not only how their enterprises’ electrical infrastructures will be able to handle increased power loads

but how power management tools such as those that Cyber Switching offers will evolve during the next two to three years. According to McCabe, Cyber Switching plans to continue to work closely with those in the field to address their needs in the long term.

“Cyber Switching will continue to have an impact on data centers in the next two to three years by continuing its tradition of innovation. That innovation comes from a grassroots approach of working side-by-side with data center personnel on the data center floor in order to understand the real issues they face,” McCabe says. “Cyber Switching has a strong team of industry leaders with a unique blend of understanding of entire power distribution processes, from building infrastructure all the way down to the outlet. Cyber Switching products will play an important part in data center success over the next few years as more and more centers discover the need to increase plug-and-power density, as well as respond to the need to reduce the amount of energy consumed.”



single interface whether they are at one or several locations. At the same time, the interface can be managed either onsite or remotely over a Web-based link.

“The EMC is scalable and uses multiple processes and process threads to distribute the task of collecting usage data from the

## Cyber Switching’s Featured Products

Dualcom	<ul style="list-style-type: none"><li>• Single- or dual-input cords</li><li>• Serial and Ethernet connections</li><li>• Web-, Telnet-, and SNMP-enabled</li><li>• Individual current monitoring</li><li>• Can be customized for different configurations</li></ul>
Dualcom S	<ul style="list-style-type: none"><li>• Events tracked in an event log, including change of outlet states, logins and logoffs, and user IP addresses</li><li>• Receive event logs via SNMP, syslog, and email automatically</li><li>• Outlet states, under- and over-current warnings, and virtual circuit breaker notices provided on front panel</li><li>• Supports temperature and humidity sensor for environmental monitoring</li></ul>
Galaxy	<ul style="list-style-type: none"><li>• Single- or dual-input cords</li><li>• Two-pole circuit breaker protection</li><li>• Horizontal format</li><li>• Can be customized for different configurations</li></ul>
Enterprise Management Console	<ul style="list-style-type: none"><li>• Open source</li><li>• Installs on Linux and Windows</li><li>• Object-oriented and modular</li><li>• Provided free with Cyber PDUs</li></ul>
E Series	<ul style="list-style-type: none"><li>• True RMS current and voltage measurement</li><li>• Single fixed input cord</li><li>• Horizontal and vertical 0U format</li></ul>





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# Processor Advertiser Directory

The following pages provided a brief snapshot of Processor advertisers and the products they offer. Ads are sorted by category, making it easy for you to find advertisers offering the products and services you need.

For more detailed information on these advertisers and the products they offer, look for their ads inside this issue.

To list your company and products, call (800) 247-4880.

PHYSICAL INFRASTRUCTURE




At A-Neutronics, our mission is to provide our customers with reliable products that best satisfy their needs. We are a small company with little overhead, which means savings for you. And while we offer discount-priced products, we don't discount the service. We provide professional and helpful personnel to assist you with your purchase and technical support issues. All products are UL-approved and ship daily from stock.

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(877) 263-8876 | www.a-neutronics.com

PHYSICAL INFRASTRUCTURE



With increasing rack density and server power, data centers are more active than ever before. And with this increased activity comes increased thermal output. The AdaptivCool division of Degree Controls was established in 2005 to address thermal-management problems in data centers. AdaptivCool builds on Degree Controls' expertise in thermal management through the effective management of airflow, helping data centers address concerns with no rack movement or downtime.

**Products Sold:**

The AdaptivCool system and HotSpotr line of active airflow components, which direct cooled air where it is needed and return warm air back to CRAC units for humidity control.

(877) 334-7332 | www.AdaptivCool.com

PHYSICAL INFRASTRUCTURE



AVTECH Software, founded in 1988, is focused on making the monitoring and management of systems, servers, networks, and data center environments easier. AVTECH provides powerful, easy-to-use software and hardware that saves organizations time and money while improving operational efficiency and preparedness. AVTECH products use advanced alerting technologies to communicate critical status information and can perform automatic corrective actions.

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A full range of products that monitor the IT and facilities environment, including temperature, humidity, power, flood, room entry, and UPS

(888) 220-6700 | www.AVTECH.com

PHYSICAL INFRASTRUCTURE




BayTech was founded in 1976 and, since the 1990s, has developed unique products for remote power management. The company uses printed circuit board instead of wires for a better, more resilient connection between the data center equipment and the receptacle. BayTech provides an extensive Web site with brochure downloads, warranty information, and reseller support and also offers evaluation units for data centers.

**Products Sold:**

- Power control, distribution, management, and metering
- Power transfer switches
- Console management and remote site management

(800) 523-2702 | www.baytech.net

PHYSICAL INFRASTRUCTURE




Cyber Switching began pioneering power distribution technologies in 1994. Our PDUs are used to power cycle and manage power to blade servers, routers, SANs, and other data center equipment. Our intelligent PDUs can monitor current individually by outlet and also provide virtual circuit breaker protection on an individual outlet basis. **No other PDU on the market offers these unique features.**

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- Metered power distribution
- Three-phase power distribution
- Energy management and control
- Switches
- Patch Panels

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PHYSICAL INFRASTRUCTURE



Eaton has many global brands that provide customer-driven PowerChain Management™ solutions to serve the power system needs of the industrial, institutional, government, utility, commercial, residential, IT, and mission-critical OEM markets worldwide. For more than 40 years, Eaton has worked closely with customers to meet their requirements for innovative, end-to-end power protection and management solutions.

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(888) 222-7270 | www.hergo.com | GSA Contract Number: GS-29F-0133G

PHYSICAL INFRASTRUCTURE




Information Support Concepts markets products for networking, telecom, corporate training rooms, and school computer classrooms. Information Support Concepts, founded in 1987, believes in taking a hands-on approach with customers, providing for a better overall buying experience. Information Support Concepts also offers access to product managers to talk about custom or difficult applications.

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IT Watchdogs got its start when founder Gerry Cullen developed a product called Weather Goose in an apartment in Houston. Today, the company has seven different climate monitors and more than 70 different product numbers. At IT Watchdogs, we believe in providing customers with low-cost climate monitors that have the same or better features than competitors'. Plus, we offer fast, professional response to customers, with support handled by the same programmers and engineers that develop and maintain our products.

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PHYSICAL INFRASTRUCTURE



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PHYSICAL INFRASTRUCTURE



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## Metered Outlet - MRP

### Additional Unique Features



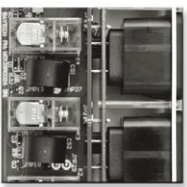
**All Circuit Breakers Monitored**  
Most metered power solutions only monitor input power. BayTech monitors all circuit breakers and reports via SNMP when thresholds are met.



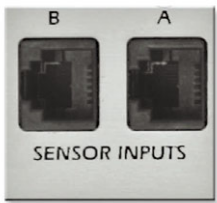
**Outlet Metering with Efficiency**  
Monitor individual outlets and receive current, watts, and volt-amps. Continuously monitoring equipment for efficiency with power factor.



**Locking C13 Receptacle Optional**  
Reliable integrated locking clips assure power cord retention. Unique to the industry and does away with nuisance wire clips.



**Reliable PCB Power Distribution**  
ISD's (Insulation Displacement) connectors are faulty and unreliable! All BayTech power solutions use reliable PCB power distribution.



**Integrated Sensor Inputs**  
Eliminate the need for extra environmental monitoring devices. All BayTech power solutions offer two ports for external temperature and humidity probes.

## Going Green!!!

Power Factor is Real and now it's Real-Time with the MRP Power Solution

Reach operational efficiency and conform to new Green Energy standards with the MRP outlet monitoring solutions.

BayTech's metered outlet modules report Amps, Voltage, VA, Watts, power factor and efficiency per receptacle.

Through our secure SNMP engine thresholds can be set to help identify equipment that is running inefficient.

#### Standard Features

- Single Phase and Three Phase
- 20,30,50,60 Amp Support
- On, Off, Reboot option
- HTTPS, SSH, SSL Access
- Radius, TACACS Authentication
- Tool less Mounting

#### Unique Features

- Modular Design
- All Receptacles Monitored
- Power Factor per Outlet
- kW Hour Meter per Outlet
- Current, Voltage and VA and Watts
- Reliable PCB Power Distribution
- Fail Functional Design

## Control and Circuit Metering-MRP

### Unique Features



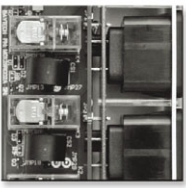
**All Circuit Breakers Monitored**  
Most metered power solutions only monitor input power. BayTech monitors all circuit breakers and reports via SNMP when thresholds are met.



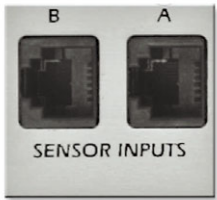
**Optional Outlet Metering with Efficiency**  
Monitor individual outlets and receive current, watts, and volt-amps. Continuously monitoring equipment for efficiency with power factor.



**High Retention C13 Receptacle**  
Reliable integrated locking clips assure power cord retention. Unique to the industry and does away with nuisance wire clips.



**Reliable PCB Power Distribution**  
ISD's (Insulation Displacement) connectors are faulty and unreliable! All BayTech power solutions use reliable PCB power distribution.



**Integrated Sensor Inputs**  
Eliminate the need for extra environmental monitoring devices. All BayTech power solutions offer two ports for external temperature and humidity probes.

## Build Custom Power Solutions with Standard Modular Product

BayTech's MRP Modular Rack Power system provides reliable power distribution with maximum flexibility for receptacle selection and power input.

BayTech offers three classes of the MRP system. Switched and monitored, simply monitored and individual receptacle monitoring.

User friendly interface for controlling power to receptacles, monitoring Current, Voltage, Watts, Temperature, Humidity, and KW Hour Meter.

#### Standard Features

- High and Low Density Models
- 120/208/AC Single Phase
- 208/400VAC Three Phase
- 20,30,50,60 Amp Support
- On/Off Reboot Control
- HTTPS, SSH, SSL Access
- Radius, TACACS Authentication
- Tool less Mounting

#### Unique Features

- Modular Design
- All Circuit Breakers Monitored
- KW Hour Meter
- Current, Voltage and Watt Meters
- Integrated Locking C13 Receptacle (Optional)
- Reliable PCB Power Distribution